

MANUEL D'INSTRUCTIONS



Gravograph

VX

Section 1 - PRESENTATION OF EQUIPMENT

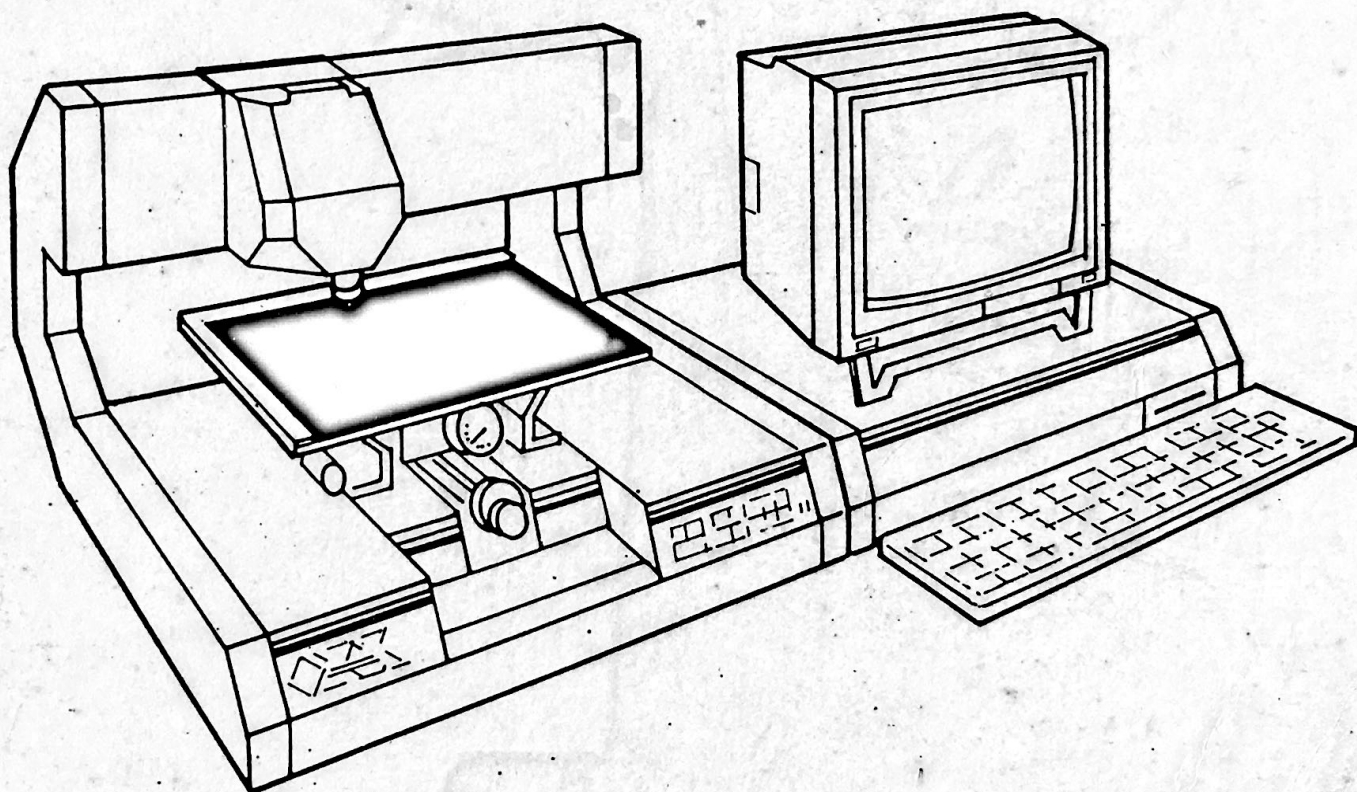
VX ENGRAVING MACHINE

Thank you for choosing the VX machine.

Indeed, GRAVOGRAPH, the world's leading manufacturer of engraving machines and materials can be particularly proud of the VX machine design.

The VX machine is a true « partner » to professional engravers, ensuring them with high quality work for preparation, checking and performing of the many technical tasks involving engraving.

The outstanding qualities of the VX machine could be summed up as a reliable « hand », combined with a professional « brain » to guide it.



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CONTENT OF PACKAGES

On receiving the packages, check that they have not sustained any damage.

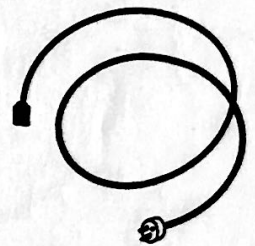
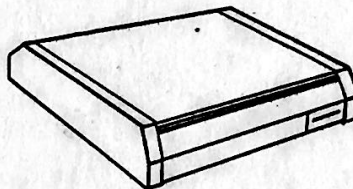
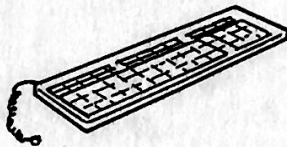
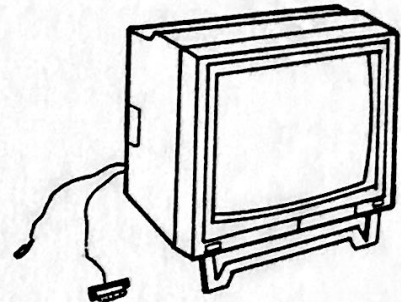
If there are signs of damage, do not hesitate to inform the transporter of the fact as quickly as possible (preferably by registered mail) and also inform your GRAVOGRAPH dealer, describing specifically the type of problem.

Retain all packing materials, you may need them to later move your VX machine in total safety.

The boxes contain:

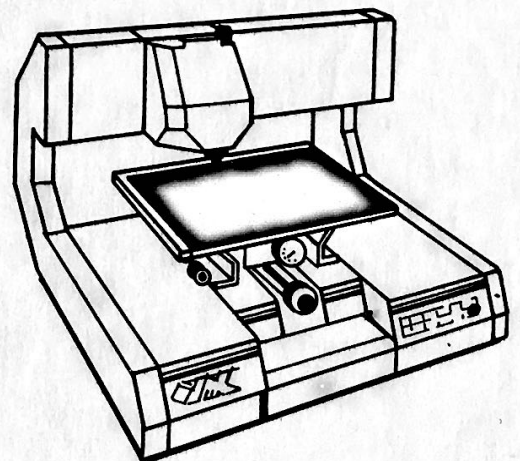
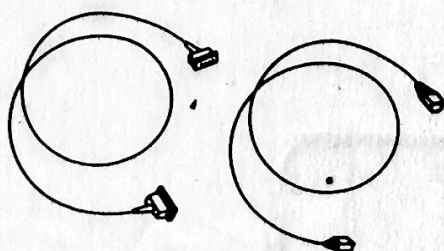
1/ THE CONSOLE

- One monitor (screen) with:
 - connection cord to central processing unit (electronic signals),
- One keyboard
- One central processing unit (microcomputer) with:
 - one mains connection cord
 - one set of floppy discs
- Literature (including this manual).



2/ ENGRAVING TABLE

- One frame/spindle assembly with:
 - electronic interconnection cable to console
 - power supply cord
 - set of Allen wrenches keys (located in tool drawer)
- In some cases, optional items such as the vacuum table, the clamping table, chip collector attachments, etc., with their accessories.



DESCRIPTION OF EQUIPMENT

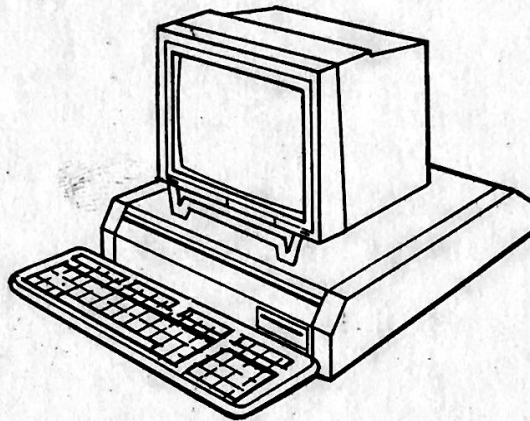
1 CONSOLE - CENTRAL PROCESSING UNIT

The first group, the "console", comprises a keyboard, a display screen and a box, known as the central processing unit, which is the microcomputer dedicated to engraving tasks.

You give it your instructions by typing them on the keyboard and, in return, you can immediately see, for monitoring, the complete display on the screen.

This dialogue is made possible by a program (also referred to as software) recorded on a small floppy disc and inserted in the equipment when it is switched on.

It is also on floppy discs of this type that you can keep a copy of your job and subsequently ask your VX machine to duplicate a previous engraving, without having to enter the instructions again on the keyboard.



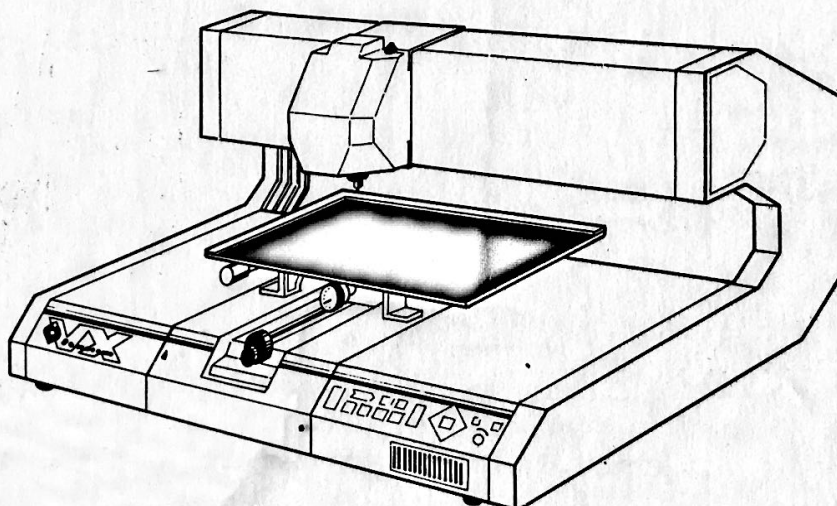
2 ENGRAVING TABLE

The second group consists of the engraving table itself, on which all the tasks prepared with the console are executed.

The basic version features a vice unit and many options are also available such as a vacuum table or a clamping table, etc.

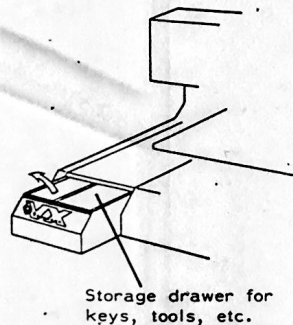
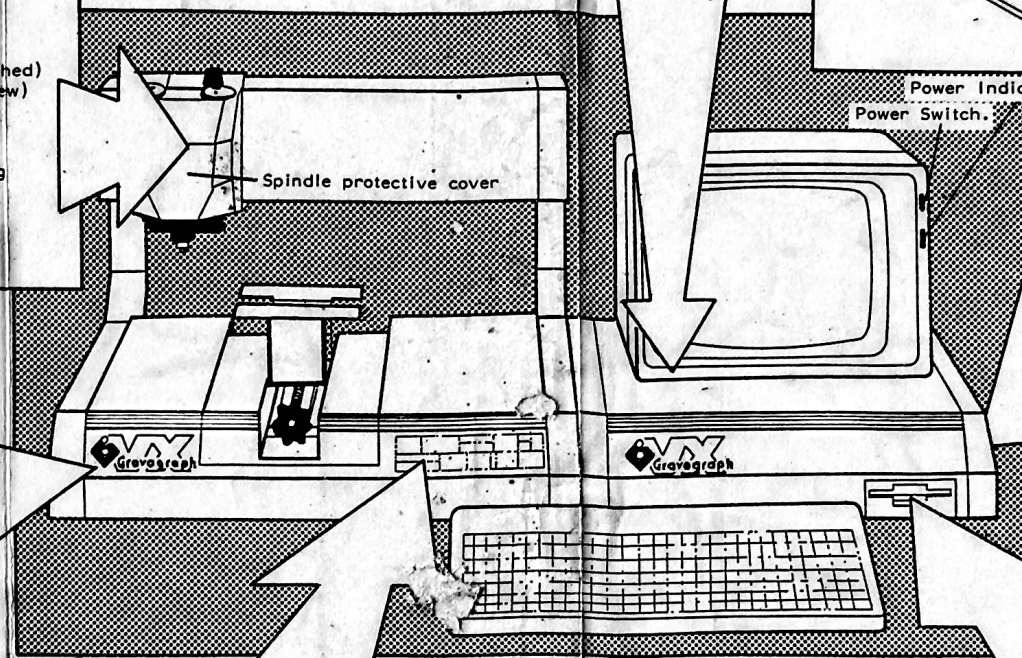
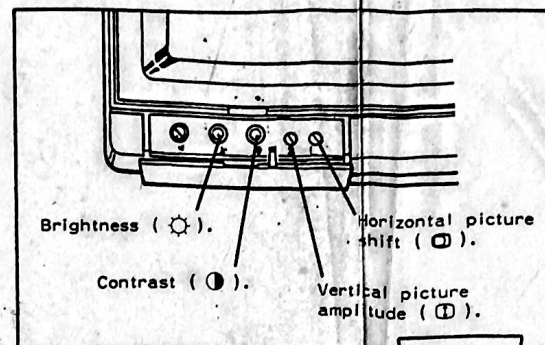
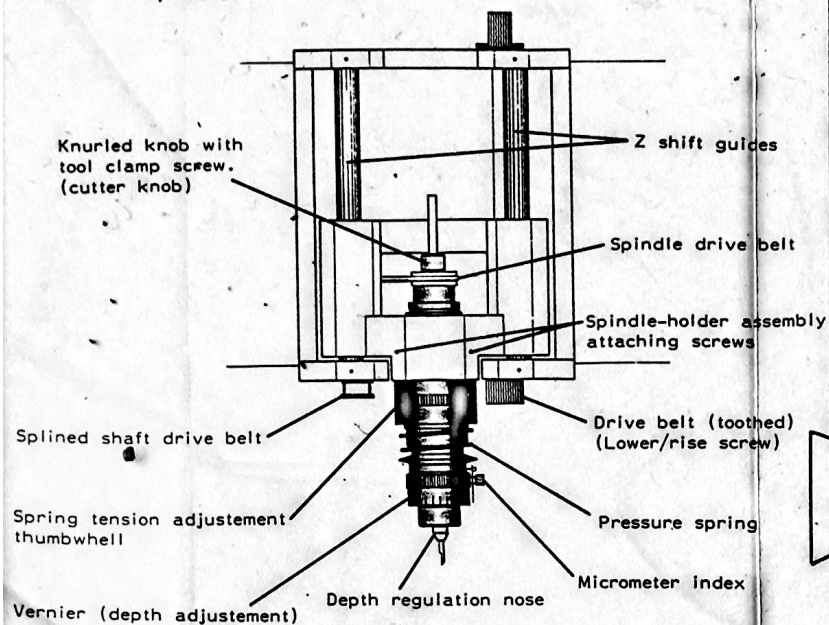
This gives great flexibility for automatic engraving tables.

With remarkable reliability, it obeys orders given from the console once the work has been prepared and checked on the screen.

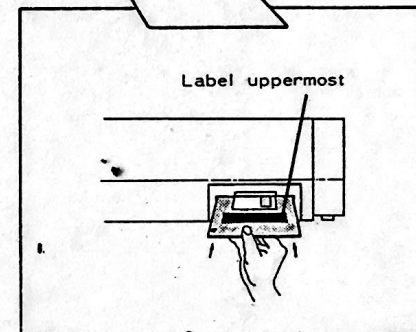
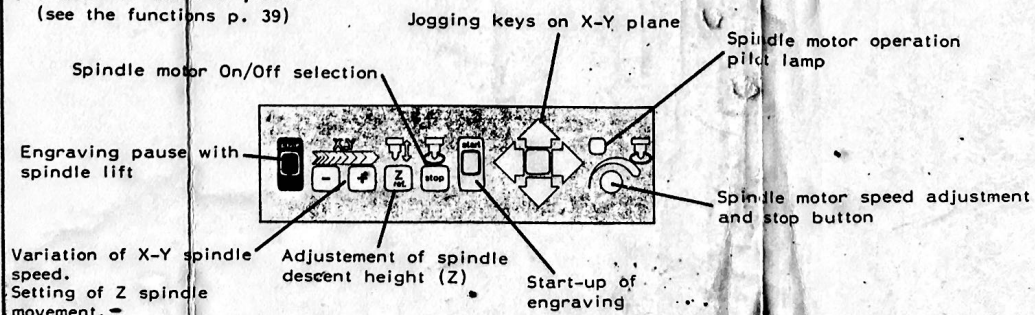


MAIN PARTS OF EQUIPMENT

-Detail of spindle.



- Detail of control panel. (see the functions p. 39)

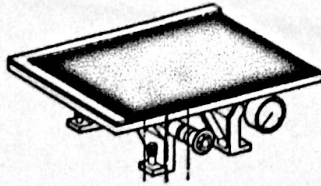


MOST IMPORTANT ACCESSORIES

Vacuum table

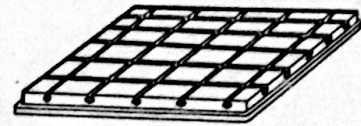
Holds flat plates in place without clamps.

Hold surface : 200x300mm
(8x12")



Large plaque holder

T-slot table



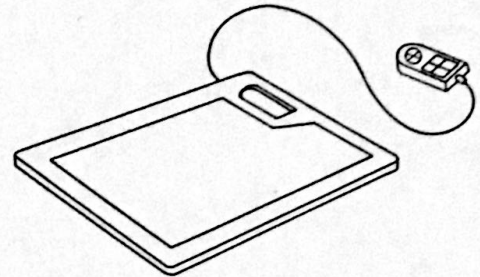
Range of spindle

- Standard, for cutter 4.36mm (11/64")
- Collet model, for cutter 6.35mm (1/4")
- High frequency
- For pyroengraving
- For diamond engraving
- For drawing with "Rotring".



Digitizing table

with digitizing program.



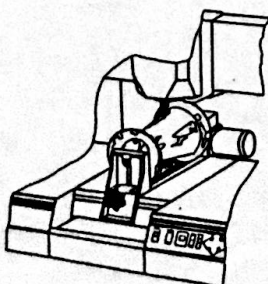
Chip collector nose

Keeps the work surface chip free.



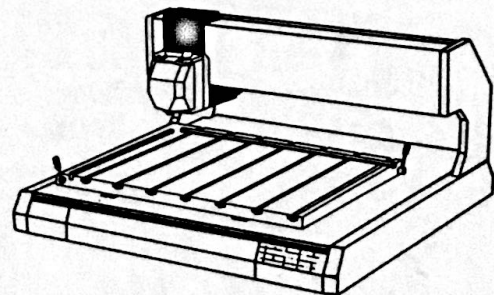
Cylindrical engraving

Various attachments for small circular items or cups with different possibilities.



Big engraving table (VX2)

With an engraving area, up to 650x490mm (26x19")



A FEW RECOMMENDATIONS BEFORE INSTALLATION ON WORKSITE

The fact that the equipment is separated physically into two elements means that your workshop layout is as flexible as you want.

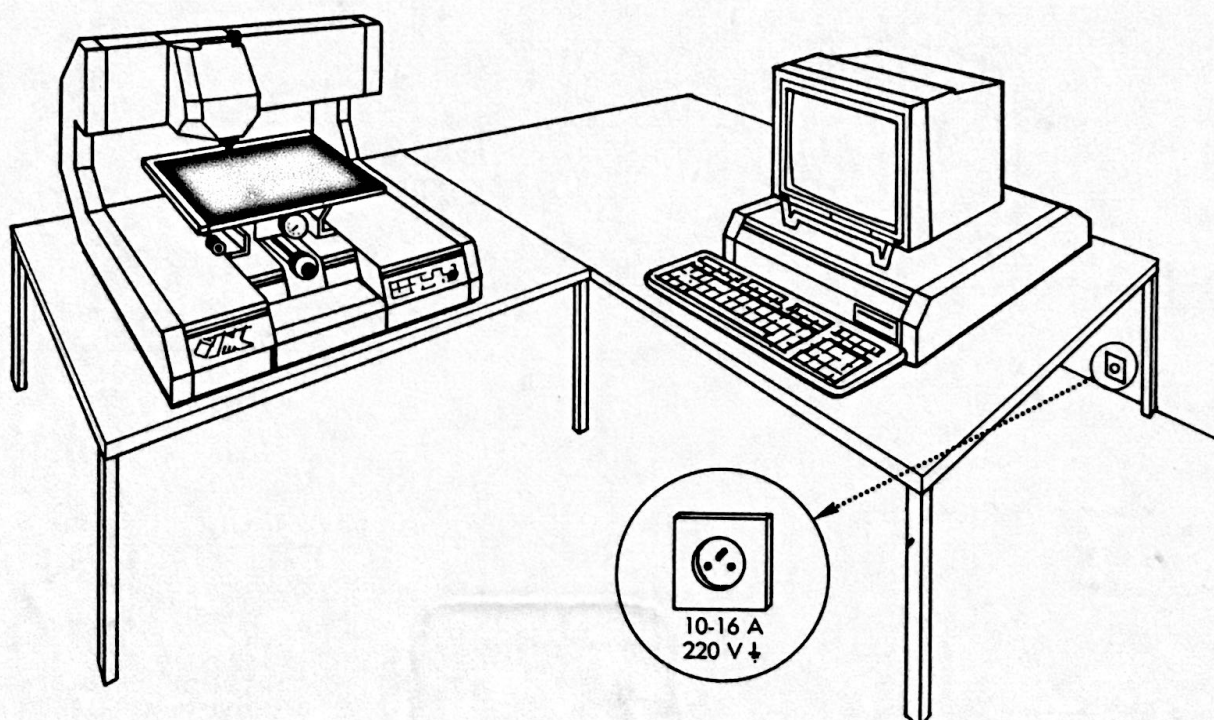
But when installing it, remember that the console can control work on the engraving table, while carrying on dialogue with you to prepare another job to be executed later, and that, if necessary, a second engraving table can be controlled from the same console.

Installed nearby, or quite separate from the engraving table, the console must be easy to reach; it must be possible for you to work comfortably at the keyboard and in front of the screen.

Avoid light falling onto the screen, causing reflections which quickly become visually fatiguing.

A 10-16 A power outlet with ground (220 V) is all you need to power your VX machine (no accessories). (A 110 V version is also available).

Run the power supply cable along walls or partitions to avoid tripping over them, which would be hazardous both to people and to the long life of the equipment.



Whenever possible, we recommend the use of a direct power supply from the electric meter (or filtered line supply), so as to avoid disturbances liable to hinder the performance of the microcomputer, due to high induction equipment which may be connected to the same line.

The console is more sensitive than the engraving table to a workshop environment.

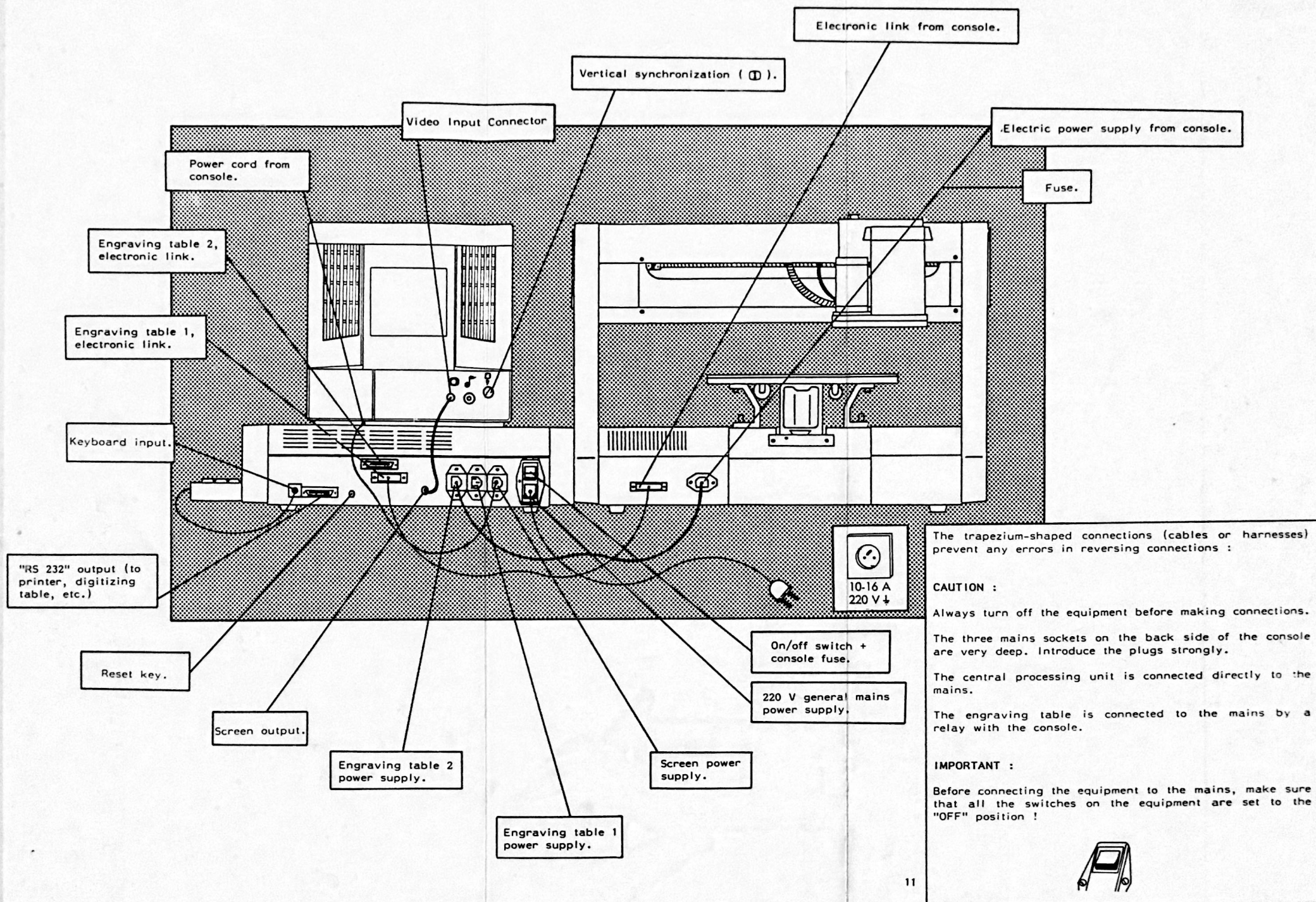
For instance, never place the system in a situation with wastes being evacuated by a blower!

Finally, two important pieces of advice:

- Allow air to circulate freely around the ventilation points (louvers) of your equipment.
- Protect your VX machine from vibrations which may be generated within the shop.

Section 2 - INSTALLATION AND COMMISSIONING

BACK VIEW AND CONNECTING

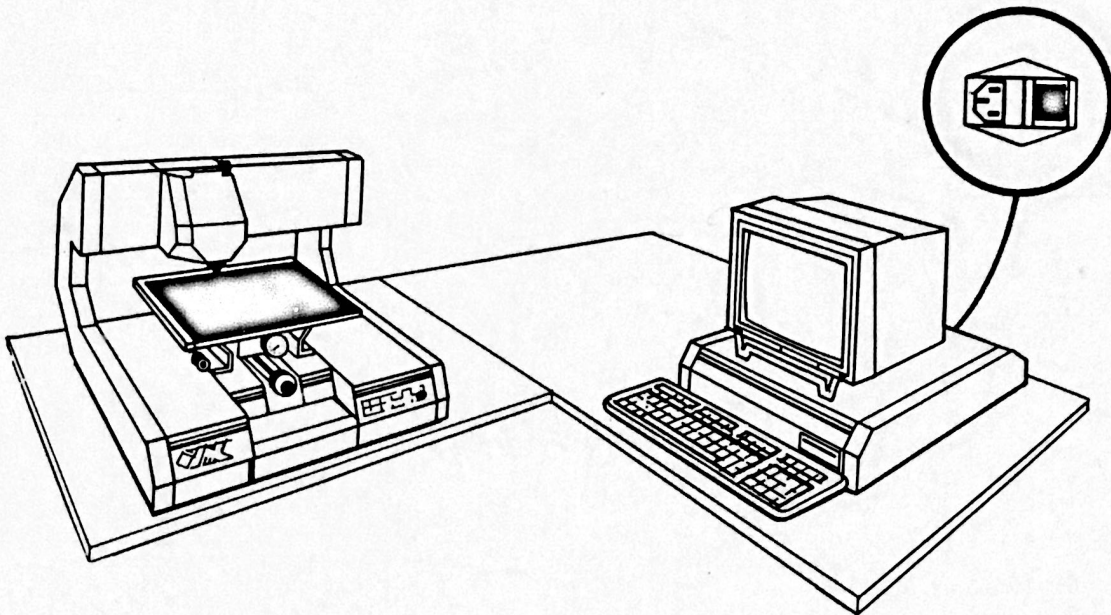


FINAL CHECKS AND SWITCHING ON

Check the stability of the equipment, the solidity and rigidity of the supporting means and the horizontality of the engraving table.

Check again the clearances around the engraving table for work on larger size plates.

Press the console switch (see diagram) to the "ON" position and turn on the screen.



The characteristic noise of the console ventilation fan should be heard; the screen pilot lamp should come on and, briefly afterwards, the screen displays an acknowledgment message.

If one or several of these occurrences fail to take place, turn off the concerned equipment (setting the switches to the "OFF" position) and check the cable connections and mains connections.

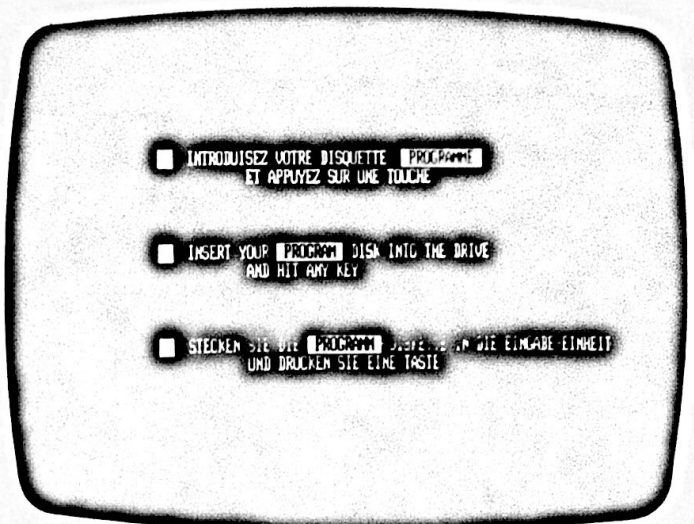
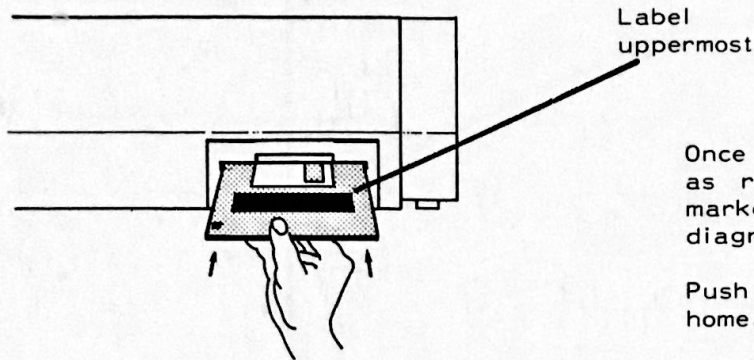
If there is a total absence of signs of power, check the electrical power supply outlet by connecting a test lamp to it, for instance.

If the latter operates properly, check the fuses of the equipment (see diagram).

Press the switches again and check the signs of power. If, in spite of all these checks, your VX machine refuses to acknowledge power, for greater safety, have the installation checked by somebody else (it is not unusual that the same error is made without one realizing the fact) before calling your GRAVOGRAPH dealer.

CAUTION: Check and, if need be, modify the connections on the equipment with the equipment switched off!

STARTING



Once your VX machine has been turned on, insert, as requested on the screen, the program disc marked VX in the horizontal slot of the drive (see diagram) located in the front of the console.

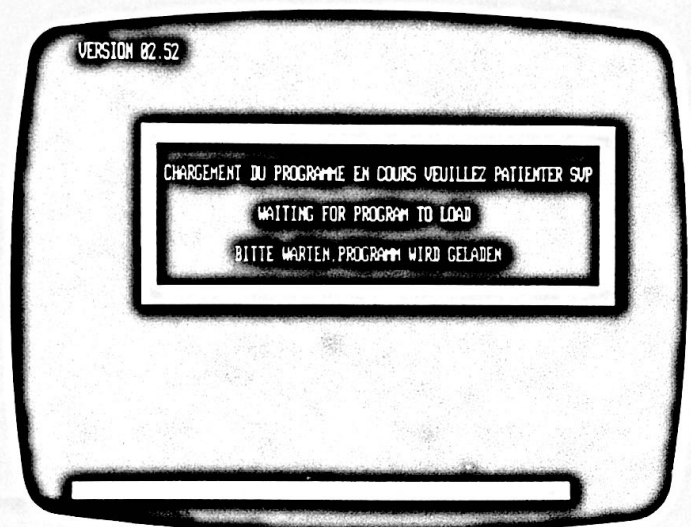
Push the floppy disc in until it is heard to click home.

Then, to withdraw the floppy disc from the drive, simply press the pushbutton placed on the front of the drive; this ejects the floppy disc.



Hit any key.

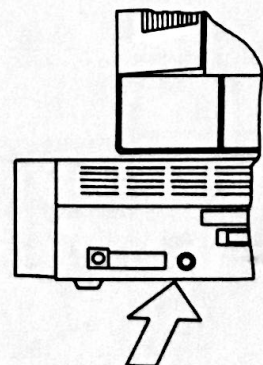
The screen then displays a message confirming that loading is underway with a mobile indicator of the reading percentage accomplished:



If nothing happens on the screen, check the contrast and brightness adjustments and, the fuse (be sure to switch the screen off before checking the fuse!).

If the screen gives other indications than the table indicated above, take out the floppy disc and check that it is the right one (VX software marked on label); if it is, check that it is correctly inserted in the drive (label uppermost, see diagram).

Insert the floppy disc in the drive again and press the "Reset" pushbutton at the back of the console (diagram opposite).

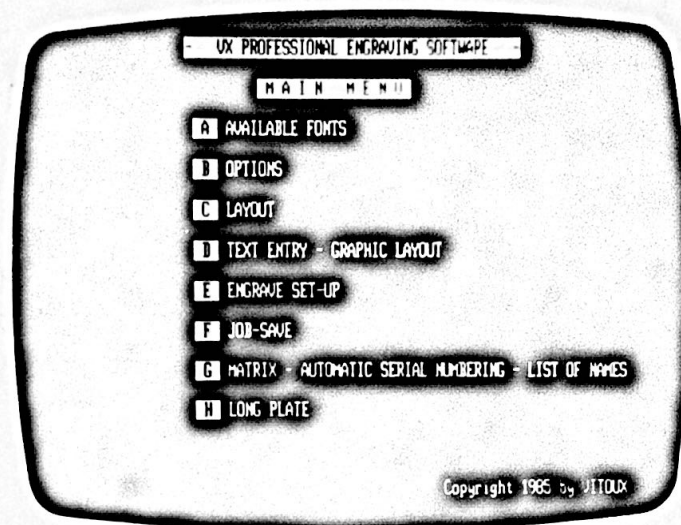


Section 3 - VX SOFTWARE

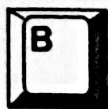
MAIN MENU

Once the loading of the VX program disc is finished, the screen displays the "MAIN MENU".

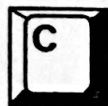
Opposite each function there is a letter. Simply press the corresponding key to gain access to the chosen function:



Choice and compilation of the sets of characters accessible in the VX console memory. (page 16)



Definition of general parameters on engraving (axis, units, origins and similarities). (page 17)



Characterization of the plate to be engraved (size and structure). (page 18)



Preparation of the proper job and monitoring display on the screen. (page 19)



Organization and setting of engraving procedure. (page 25)

Start of production on the engraving table. (page 38)



Management of floppy disc and work saving. (page 27)



Matrix program. (pages 31-37)



Long plate engraving. (page 45)

Pressing any other key will cause an error message to be displayed at the bottom of the screen; the GENERAL MENU remains displayed.

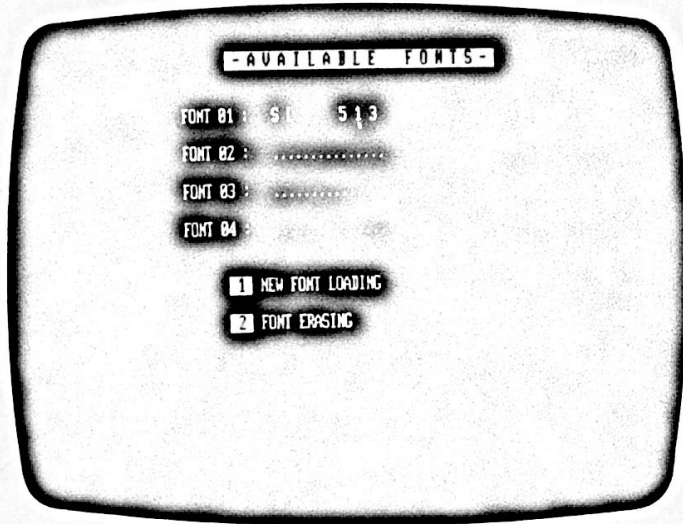


HANDLING OF CHARACTER SET

When letter A has been typed, the screen displays the list of character sets currently in the memory of the VX console (4 at most).

Specify whether you wish to load in a new set (figure 1) or, conversely, delete one from the displayed list (figure 2).

Press the corresponding figure.



Message display:



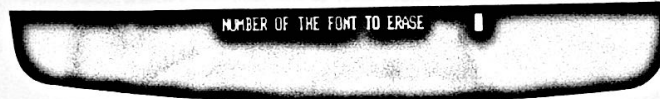
Insert the floppy disc containing the selected character set, then press any key. The character set is loaded and is displayed spontaneously in the list of sets available in the final position. The disk light will come on during loading.

CAUTION: If 4 sets are already in memory, the new set will take the fourth position, deleting the one which was previously in that position.

If the screen displays the message opposite, or if you wish to delete a set available in the memory, press figure 2.



Message display:



Enter the chosen number; the corresponding set disappears almost immediately from the list; the following fills in the gap and liberates the last line.

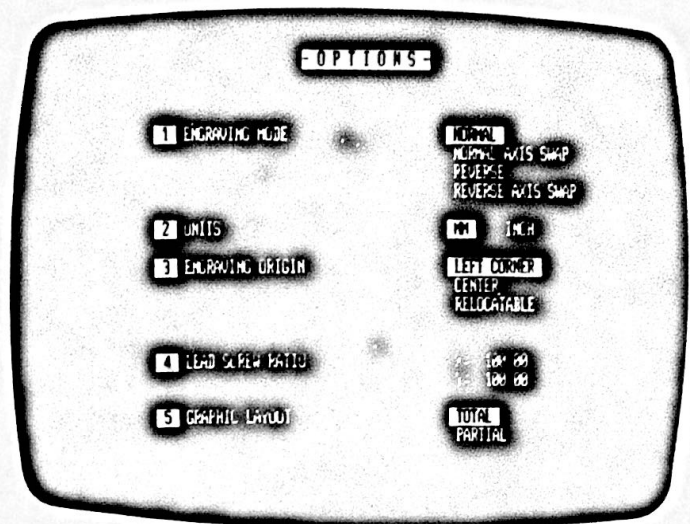
NOTE: The deleting of set N° 1 (SL 513), permanently resident in memory, is impossible and will trigger the display of the message opposite :



CHOICE OF MAIN ENGRAVING PARAMETERS

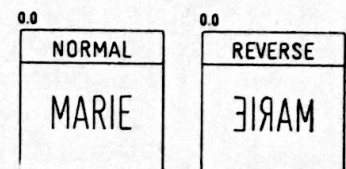
When you press key B, the screen displays a secondary MENU with five main options to be taken before any tasks whatsoever are prepared.

Except for option 4, calling for the entry of numbers which have to be validated, the three others are selected by pressing the corresponding figure (1,2,3 or 5) as many times as necessary until the desired selection on the screen is obtained, within an extra bright (or "inverse video") rectangle; in all four cases, pressing "ENTER" is pointless.



The plate displayed the right way round on the screen can be engraved as it is (NORMAL), in the mirror mode (REVERSE), with swapped axes (AXIS SWAP) or in the mirror mode on swapped axes (AXIS SWAP REVERSE).

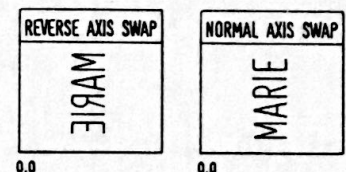
Otherwise, the NORMAL option is preselected.



The imperial unit of measurement (1 INCH = 25,4 mm) can be chosen.

All the calculations will use the same unit.

Otherwise, the unit MM will be preselected.



Three X and Y axis origins can be chosen.

The first two (top LH CORNER of the 300 x200 (11,8 x 7,87'') vacuum table and clamp CENTER) are prerecorded into the console memory.

In the case of a floating option, before handing over to the engraving table, you must specify the coordinates of this origin. This new origin is a new left corner.

Otherwise, the LEFTHAND CORNER origin is preselected.



These coefficients can be used in the case of series of engravings that are similar, but which are expanded or condensed in one of the axes.

Each coefficient corresponds to the expanding (or condensing) ratio applied to its axis and expressed in %.

This option can also compensate the unaccuracy of the thread of control screws.

Otherwise, the coefficients are set at 100% on each of the axes.



When GRAPHIC LAYOUT "TOTAL" is selected, an actual scaled image of the plate with proper character heights and font styles is shown on screen D.

When "PARTIAL" is selected, the lines of text are shown as they are entered on the screen.

"TOTAL" is the default.

DESCRIPTION OF THE PLATE TO BE ENGRAVED

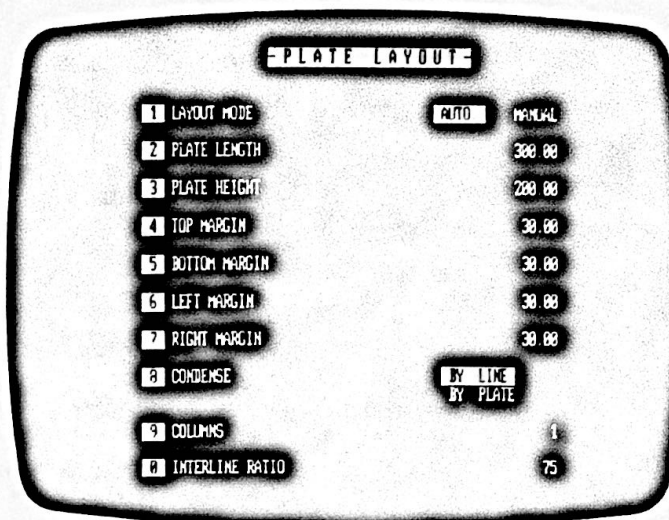
When you press key C, the screen displays a second MENU describing the different characteristics of the plate.

Choices 1 and 8 are alternating; pressing one of the figures changes the option displayed on the extrabright (or "inverse video") mode.

The other choices require the entry of figures to be entered one by one by pressing "ENTER".

The margins are calculated automatically by default as a function of the size of the plate and the working mode.

However, they are modifiable.



In the AUTO mode, the VX software calculates the distribution of the lines and characters in each line automatically within pre-established margins.

In the MANUAL mode, the margins are considered as zero, and the line position must be dimensioned and entered manually on the keyboard.



The plate sizes are entered in the unit of measurement set on screen B (MM or INCH), then validated.



Otherwise, the vacuum table size (300 x 200) (11.8 x 7.87") is preselected.

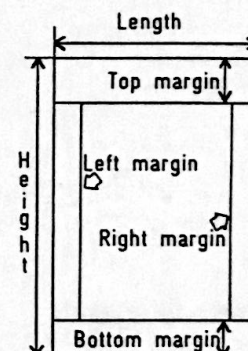


The top and bottom margins are calculated automatically by the software in the AUTO mode and equal to 15% of the plate height; they are zero in the MANUAL mode.

They can be modified separately at any time during preparatory work.



Similarly, the RH and LH margins are calculated automatically and equal to 10% of the plate length in the AUTO mode; they are zero in the MANUAL mode. They can be modified at any time of the preparatory work.



This option offers the choice between engraving with all lines homogeneous or, conversely, all lines distinct.

The option "BY PLATE" can be used only with the layout mode "AUTO", and must be confirmed at the end of the text by means of the key "F19".

Otherwise, the AUTO BY LINE organization is preselected.

CONDENSE
AUTOMATIC BY LINE
THE CONDENSING IS
DEPENDENT ON THE LINE CAPACITY

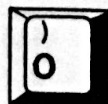
AUTO BY PLATE
THE CONDENSING IS
THE SAME ON ALL LINES



A plate can be divided into different columns considered by the VX software as individual and particular cases which it will handle separately.

If there are several columns, enter the number, then press "ENTER".

The screen D line counter then becomes a column counter.



In AUTO mode, the space between lines is a function of the height of the preceding and succeeding lines (INTERLINE RATIO). The default value is 75%. Changing it opens or closes the vertical spacing.

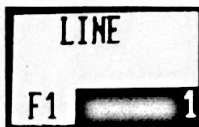
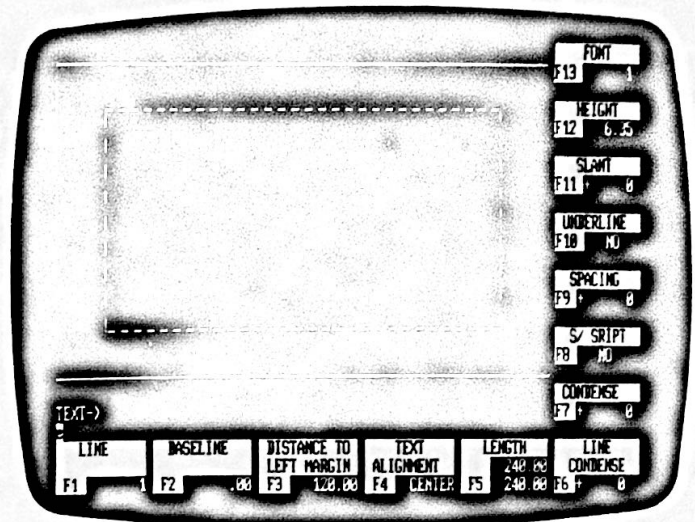
WRITING YOUR TEXTS AND PLATE DISPLAY

When you press key D, the screen groups together all the data useful for preparing the plate around the screen, within which the shape of the plaque will appear, gradually as the lines of words are entered.

The information displayed at the bottom of the screen concerns all the LINES during writing (identification, positions, length, etc.).

The information grouped together on the right-hand side of the screen characterizes the CHARACTERS (type, size, shapes, etc.) used in the line during writing.

To modify a value, simply press the corresponding key, enter the desired value, and validate.



ALL THE INFORMATION written on the screen (RH bottom and top) CONCERNS a LINE the NUMBER of which is displayed here.

To move to the next line, press the key:

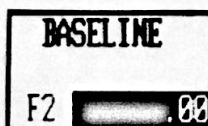


A return to the previously recorded line, if you know its number, is performed by pressing key F1, then the figure and pressing "ENTER" or using, as many times as necessary, the key:



Line N° 1 is prerecorded otherwise. When the first line is written, the next one is automatically selected, after you have pressed ENTER.

Each line contains up to 80 characters.



The position of the character base line is set automatically from the top margin (i.e. from the top edge when the margin is zero) and cannot be modified unless the MANUAL mode (screen C, choice 1) is used.



A line of characters can be positioned either to the right, to the left or centered with respect to ALIGNMENT AXIS. The position of this axis is always calculated by its distance from the LEFT-HAND MARGIN (or the left-hand edge if the margin value is zero).

The way the system positions characters on a line depends on the selected working mode (AUTO or MANUAL):



AUTO mode (see menu C).

CENTER: the line is automatically centered about the alignment axis which is at the center position (between left and right-hand margins).

LEFT: the first letter is positioned next to the left-hand margin.

RIGHT: the last letter in the line is positioned next the right-hand margin.



MANUAL mode (see menu C).

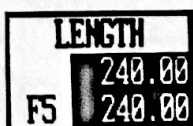
Margins are zero by default.

The position of the alignment axis is calculated (key F3) from the left-hand margin (or left-hand edge if margin = zero).

CENTER: the line is centered on the alignment axis.

RIGHT: the line is positioned to the left of the alignment axis, but justified to the right.

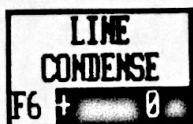
LEFT: the line is positioned to the right of the alignment axis but justified to the left.



The length of a line is calculated automatically and, for each column, equals the distance between two extreme alignment axes (LEFT and RIGHT).

You can modify this length: press the key and enter the new distance, then press "ENTER".

The length is then displayed opposite F5; above will appear the remaining free distance gradually as the text is entered on the keyboard. When the last figure equals 0, automatic condensing becomes effective, and the rate of condensing is displayed (see F6).



If the line capacity in terms of characters is exceeded (within the length limits defined in F5), the characters are condensed (width reduced) uniformly and the text condensed is put onto the same line. A buzzer notifies the beginning of the condensation.

The condensing percentage (preceded by the sign -) appears opposite the indication F6.

If the option BY PLATE is previously chosen (screen C, choice 8), all the wording on the plaque will be compressed, in the same way as the longest line (after pressing F19).

You can also deliberately set the rate of condensing. For this purpose, enter the sign - , then the value in % and press "ENTER".

Any positive figure (entered directly without typing sign +) will correspond to uniform expansion of the characters.



-22% (CONDENSE)
-44% (VERY CONDENSE)
+20% (EXPANDED)

This key serves the same purpose as CONDENSING (see F6); it condenses (negative values) or expands (positive values) the characters entered on the keyboard after the command, without affecting the previous characters on the same line.

Press the key, then enter the value in %, by preceding it, if necessary, by the - sign, then press "ENTER".

Otherwise, the value 0 is preselected.



After pressing this key, the characters are reduced to half basic height (displayed in F12) and are positioned high as an exponent (+ display) or low as an index (- display).

Pressing the key successively display : NO, +, -, NO, etc.

Otherwise, NO is prerecorded.



Standard character spacing, called by this key, can be increased (positive values) or decreased (negative values).

The variation is measured as a percentage of the increase or decrease of the standard gap (from + 250% to - 99%); enter the - sign before the % for reduction, or directly the % for increase, then press "ENTER".

The standard gap (values 0) is prerecorded otherwise.



After pressing this key, the characters are underlined by a line whose distance from the base line is expressed as a percentage of the character height (displayed at F12).

Press the key, then enter the value in % and press "ENTER".

The underlining NO is prerecorded otherwise; it is redisplayed when the F10 key is pressed again.



After pressing this key, the characters are slanted by a number of degrees, as entered on the keyboard (from + 45° to - 45°), in some cases preceded by the sign - (reverse inclination). Then, pressing "ENTER" is necessary.

In the case of plates with small or zero margins, make sure that the chosen slant angle does not move the tool out of the physical limits of the plate when the edge slanting characters are engraved.

Value 0, prerecorded otherwise, corresponds to the standard character form.

Slanted + 25°

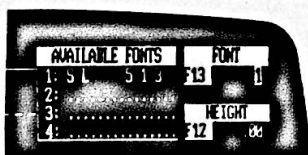


This key specifies the height of the characters entered on the keyboard. The VX software has a value of 6,35 mm (0,25") by default. (It will not display however, until a line of text is entered).

To change the height from 6,35 mm, type the number (from 0,6 to 200 mm) (0,025 "to 7,8"), then press "ENTER".



After using this key, the characters appear in the form defined by the selected set number.



The screen displays a supplementary window giving the sets available in memory and indicates the corresponding call numbers.

Type the number, then press "ENTER".

TEXT INPUT KEYS

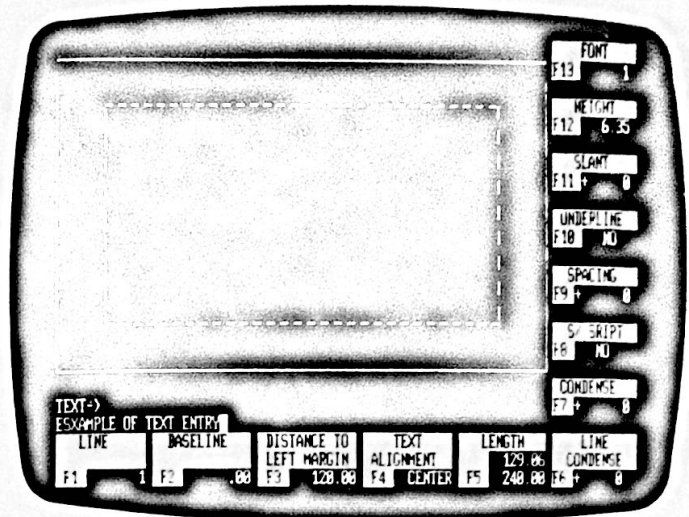
The typing of texts to be engraved is carried out line by line and, in some cases, within the same line, column after column.

But within the same line, the parameters of the characters used may change (size, shape, etc.) using function keys F7 to F13.

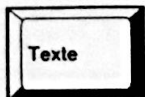
Two remarks on this point :

- These modifications concern only the characters following the cursor of the line.

- To return to text input, prior use of the key "TEXT" is necessary each time.

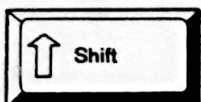


The bottom of the screen contains all the informations concerning the line being edited (number of which is indicated at F1), while the righthand side of the screen groups together the parameters of the chosen characters (size, shapes, etc.)

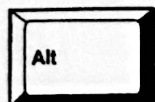


The "TEXT" key informs the console that you are ready to enter text; the various parameters are set.

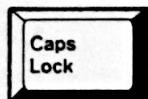
Use this key whenever you enter or modify the content of the line of text the number of which (and possibly that of the column) is displayed at F1.



When pressed at the same time as another key, the "SHIFT" key produces capital letters and symbols inscribed in the upper section (and on the left) of the caps.



The "ALT" key, when pressed at the same time as another key, displays the symbol located on the right of the cap, when there is one.



The "CAPS LOCK" key permanently maintains the CAPITALS mode, but has no effect on the symbols marked in the top part of the caps.

When pressed a second time, it activates the lowercase mode again (activated by default on powering up console).



The "<" symbol, placed between characters, moves them closer to one another by approximately 10% as compared to the standard gap.

When used repetitively ("<<<<", for instance), it brings the two characters much closer together.

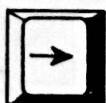
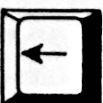


Conversely, the symbol ">", placed alone or repeated between two characters, increases their standard gaps.



When this key is pressed during a text, it results in automatic stoppage during engraving (with tool up) at the point designated, equivalent to manual operation of the "PAUSE" pushbutton on the engraving table control panel.

Once the action is made (e.g. tool change), push "START" to restart the engraving.



Once the "TEXT" key is actuated, these keys cause the "cursor" to shift along the line of text and to take position at the desired location.

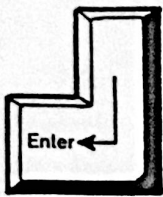


The "INS CHAR" key, whenever pressed, releases one space just on the "cursor" position on the line of text. Any characters typed subsequently will take place in this released interval, in order to be inserted in the text.

To replace one character by another, bring the "cursor" onto the character to be changed and type the new one, which is then displayed in its place.



The "DEL CHAR" key, when pressed, deletes the character where the "cursor" is located; the righthand part of the line is offset by the same distance to the left to fill the gap.

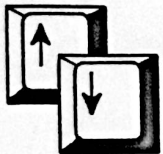


This fundamental key is used for :

- confirming figure data entered on the keyboard,
- confirming the end of a text in a line and displaying it.
- finally, confirming parameter modifications on a line, and displaying it.



In "TEXT" mode, this key confirms any modifications made in a line written before, wherever the position of the cursor (same as "ENTER" at the end of the line).



Change from one line to the next, or return to a line which has already been entered, is carried out by pressing, as many times as necessary, the keys bearing vertical arrows.

The line number and, in some cases, the column number, is displayed in window F1 at the bottom left of the screen.



The "DEL LINE" key cancels the line (or the fraction of the line in the column) reference of which is displayed in window F1. During work in the AUTO mode, the line positions are recomputed automatically.



The "ZOOM" key displays a line of which relative character size renders them hardly visible on the screen in the event of the entire plate being reduced.

When operated, it isolates the selected line (displayed at F1) and displays it on the screen, twice bigger. If it is not enough, press once or several times on "ZOOM", until the line get the dimensions you wish.

Press "D" to continue !



The "ESCAPE" key is the second key in order of importance, after the "ENTER" key :

It is used for :

- quitting the screen being used at any time, once particular data has been entered, with return to the main menu.
- cancelling particular data entry before pressing "ENTER".
- cancelling a line of text, before pressing "ENTER".

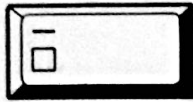


Finally, from the MAIN MENU the "CONTROL"-"DEL PROG" keys, when pressed simultaneously, delete, after pressing "ENTER", all recorded data, releasing the memory for further work.

+



Caution : Before beginning another task, check that the previous task has been deleted.



With this key, it is possible to prepare rectangles (e.g. frames) or to mark the four holes to be drilled for fixing a plate.

- To enter a rectangle :

Move to a free line, enter the data for the rectangle, i.e. baseline by F2, distance to left margin by F3, the text alignment by F4, the length by F5, and the height by F12 (the rectangle is nothing else than a character).

Hit "TEXT" and then simultaneously "CONTROL + SHIFT + RECTANGLE".

A single rectangle needs a full line.

- To mark four points in the edges of a rectangle:

Call a new line, set the dimensions and position by means of F2, F3, F5 and F12.

Hit "TEXT", and then simultaneously "ALT + RECTANGLE"

Remark : In both of the above cases, it is possible to use the function key F11 "SLANT" if you wish that the sides of the figure get an inclination.

This key must be used in the layout mode "MANUAL".



With this key, it is possible to get lines or to mark the two holes for fitting a small plate.

- For a line, enter the wanted value by F2, F3, F4 and F5, hit "TEXT", and then press it simultaneously with "SHIFT".

- Getting two points, is made in the same way, but you must press simultaneously "ALT".

Remark : Must be used in the layout mode "MANUAL".



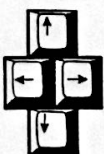
+



This key is used to make vertical lines (or slanted ones, by F11).

The dimensions and position are given in the same way as for a normal letter. It can be entered in a normal line with other characters.

Remark : Can be used either in the layout mode "AUTO" or "MANUAL".



Gives the possibility to displace (to Jog) a line of characters in the direction you wish.

Each time that you hit "ALT + ARROW", the line will be displaced in the direction of the arrow by 2 mm (0.08").

Caution : don't push the line over the margin.

Remark : Must be used in the "MANUAL" mode.

TECHNICAL SPECIFICATIONS AND STARTING OF ENGRAVING

Once checked on the screen, the plate can be engraved on the engraving table.

The screen E will ask you to specify some technical data before transferring the job prepared into the "brain" of the engraving table.

The screenshot shows a terminal window titled "ENGRAVING SET-UP". It contains a list of numbered options on the left and a data entry area on the right.

	PASS 1	PASS 2	PASS 3	PASS 4
1 ENGRAVING MACHINE	TABLE 1			
2 NUMBER OF PASSES	1			
3 SPEED	100	100	100	100
4 DEPTH	.00	.00	.00	.00
5 DWELL TIME	0	0	0	0
6 ENGRAVING START				
7 RE-ENGRAVING				



Press this key if you want to select another engraving table (if there are 2 machines controlled from the console). Engraving table number 1 is preselected otherwise.



Indicate the number of passes desired.

Enter the figure, then press "ENTER". A single pass is preselected otherwise.



For each pass, specifies the linear rate of movement of the spindle. To do this, enter a number from 1 to 200, then press "ENTER", to modify in proportions of 0 to 2 times the speed otherwise calculated on base 100.

This speed can also be adjusted manually from the control panel of engraving table.



For each pass, gives the spindle depth of cut beyond the ZERO vertical point (Z ref.). Enter the distance, press "ENTER".

If a "nose" is being used, it is advisable to use a slightly greater dimension than the engraving dimension (adjusted with the Vernier on the spindle itself) to allow for setting back of the "nose" during adjustment, and to ensure that the nose is always in contact.



For each pass, slows the spindle lowering speed just before the cutting tool attacks the material, to avoid slow-down in the speed of rotation.

Enter a figure between 1 and 99, then press "ENTER". Value 0 otherwise preselected, corresponds to a zero time delay, whereas it corresponds to about 2,5 mm/s (0,1"/s) with figure 99.



This is followed by transfer of all the prepared data to the engraving table and handover to the control panel.

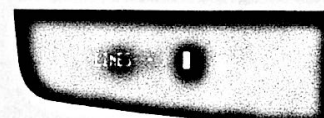
NORMAL TERMINATION FROM RUNNING

The screen then displays a series of instructions to be complied with prior to the start up of engraving.



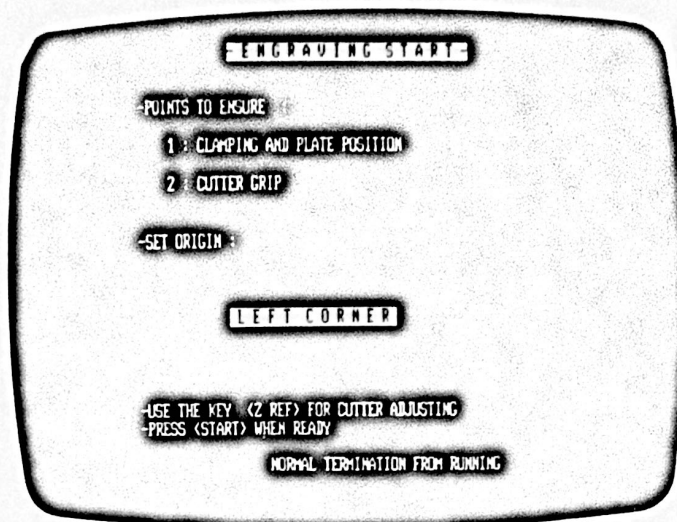
In the event of a malfunction, to avoid reengraving from the beginning of a plate, in answer to a question asked on the screen, with this key you can indicate the number of the line(s) to be rerun.

Enter the corresponding numbers, separated by a comma (,) if you are handling them one by one (for instance 2, 5, 8) and by a dash (-) to indicate a series, including limits (for instance 4-7 means line 4 to line 7 inclusive). Press "ENTER".



TRANSMISSION OF ENGRAVING ORDER

Once figure 6 is pressed to confirm the engraving order to be carried out by the engraving table, the E screen menu makes way for a set of instructions which are given in the following form :



The following instructions are indicated on the screen each time :

- the correct location and clamping on the plate to be engraved
- the selection and assembly of an engraving tool in the spindle
- the confirmation of the origin point of the engraving
- the reminder of the procedure to set the depth of the cutting tool ("Z ref")
- and the starting of engraving ("START")

The engraving table is now independent to engrave the plate(s) as prepared by you, with the VX software.

During engraving, the console can be used for other jobs.

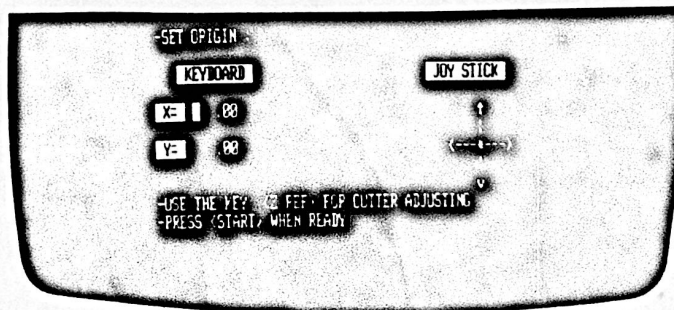
Until this new job has been sent to the engraving table (E screen, choice 6), it is possible to give it orders to restart (screen E, choice 7) for the work in progress.

The origin of axes (X,Y) chosen (B screen, choice 3) is indicated on this screen. When the origin is defined as "RELOCATABLE", the screen asks for the coordinates of new origin.

They can be entered on the keyboard (they are determined with respect to the LH corner of the table); enter the value for X, then press "ENTER"; do the same with Y and press "ENTER".

It is also possible to enter them manually from the control panel of the engraving table, by placing the tool physically at the location provided for as origin.

To do this, press the "ESCAPE" key, then use the X/Y jogging keys (indicated "JOY STICK" on the screen) of the control panel.



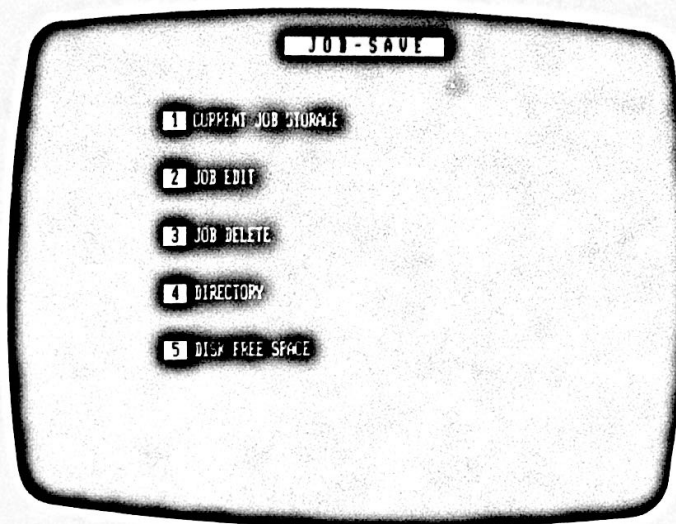
JOB SAVING

Once the work has been checked on the screen and the technical parameters of the engraving have been entered on the keyboard saving is accomplished by typing letter F to display the SAVING MENU on the screen.

The saving can be made at any time during the preparation of the job. It is advised to save long jobs many times during the preparation.

Consulting the content of the floppy discs and recalling jobs previously accomplished into memory are carried out on the same screen.

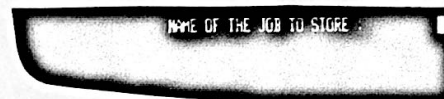
Type the figure corresponding to the chosen options.



Used to copy on a "JOB SAVE" disc a job prepared with the VX software and currently in the console memory.

Use only the "JOB SAVE" disc supplied to you by your GRAVOGRAPH dealer.

The screen will ask you to type, on the keyboard, the name (or reference) you have given to the job. Press enter at the end of typing.



You have 14 alphanumeric characters to indicate this reference.

After SAVING, the work is held in the central memory, and can be consulted or modified, or engraved. If you wish to move on to another job, you must delete the old job (see p. 23).



This key, in the same way as the three following keys, gives a screen display of the abbreviated (only 4 characters) job reference list recorded on the disc with opposite each name, an order number.

To call out a former job, to carry out a new job or modify the parameters, the job must be loaded into the console memory; in answer to the message displayed on the screen, type the order number and press "ENTER".



The screen confirms the end of the transfer.

CAUTION: This operation will clear the work previously contained in the memory. If you want to preserve a trace of it, think of making a copy before loading on another job.



Is used to clear the jobs you no longer require on a "JOB SAVE" disc.

It leaves room on the disc for new jobs.

Enter the order number of the job to be cleared in answer to the question asked on the screen, then press "ENTER".



CAUTION: Clearing is final!



Respectively, this feature displays the content and the available room on the "JOB SAVE" disc in the drive.

The content is then fully displayed, and not abbreviated as with the keys 2 and 3. If this list is too long for the screen height, pressing any key calls the rest of the list.

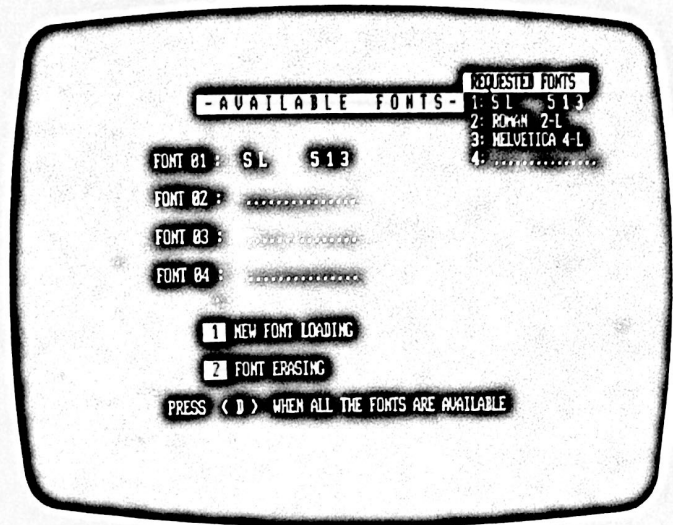
The content is displayed in the same way as with keys 2 and 3, and the available room is displayed as a percentage of the nominal capacity.

COHERENCE OF CHARACTER SET

When you have called a job formerly stored (saved) on a floppy disc, into the console memory, the screen displays the various sets of characters (four at the most).

Their presence is necessary in memory to be able to execute the engraving ("REQUESTED FONTS").

Comparison with the list of sets loaded into memory at the time ("AVAILABLE FONTS") serves to identify whether loading supplementary sets into the memory is required.



This screen, similar to the A screen, can be used for loading new sets of characters into the central memory, in the same way that is done on the A screen.



Confirms the character set loading option from a floppy disc in the drive.

Follow the instructions given on the screen (if necessary, refer to the manual regarding choice 1 on screen A).

Load in as many sets as necessary.

CAUTION : The AVAILABLE FONTS column must exactly match up with REQUESTED FONTS column INCLUDING THE ORDER OF SUCCESSION OF THE SETS (i.e. each font must be numbered the same in both columns)

If necessary, carry out prior deleting.



Serves to delete unnecessary sets or to release room to accommodate new sets of necessary characters.

Follow the indications given on the screen (if necessary, refer to the manual regarding choice 2 on screen A).

Note that the loading of a fifth set will erase the fourth set and replace it by the new set.

COMPOSING IN COLUMN

The Gravograph VX software can be used to compose plates with text spread over several columns.

When required, return to menu C to enter the number of columns (key 9).

Typing text (menu D) in "column" blocks follows the same rules as for single lines.

Note that :

Instead of the line number, window F1 displays "Cx" where x is the column number.

The program will use all the columns in a single line before moving onto the next line.

AUTO mode sets vertical and horizontal spacing.

Aligning text inside a block about the block's alignment axis (LEFT, CENTER or RIGHT, key F4) is achieved in the same way as for a single line in MANUAL mode.

You can change the number of columns by returning to screen C after entering a complete line on screen D. You must finish a line before returning to screen C. If there is no text for the last column, enter a blank.

Normally it is easier to work in AUTOMATIC layout mode; but it is possible to work in MANUAL mode (screen C, option 1). In MANUAL mode, you must enter the baseline for each entry. The only advantage is that you can enter different columns of a line at different baseline positions.

You can change the width of each column independently; but be aware that you may wind up with overlapping columns if you are not careful.

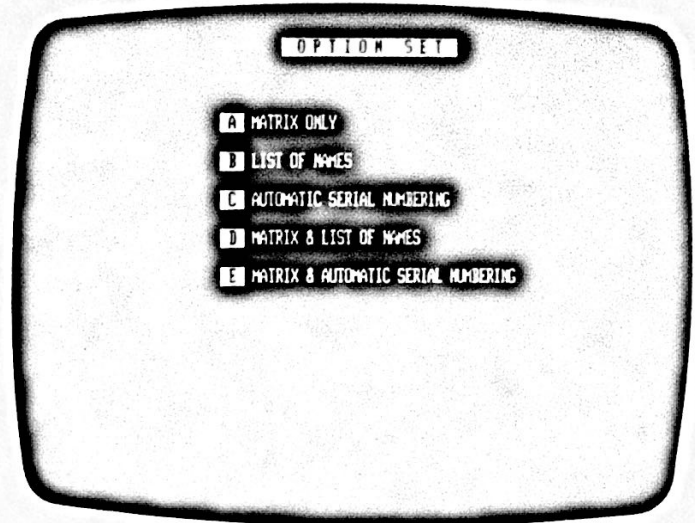
If you delete in a line the first column, the rest of the line will be deleted. To get the first column of a line empty, enter a blank

Section 4 - MATRIX

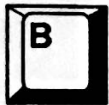
MENU

The G menu allows you to access different programs for the preparation of various series of fixed or variable repetitive engravings. The variables can be drawn from a list of names or come from a numbering program.

It is possible to prepare combinations of a list of names and various numeric incrementations.

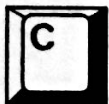


Enables you to access the "MATRIX" menu, from which you can prepare one single plate for the engraving of identical labels and plates.



This menu enables you to prepare a list of names and to engrave a series of plates by placing one after the other on the engraving table. Each time you press "START" the next plate will be engraved with the next name.

These names can be entered into a fixed text.



This menu enables you the preparation of up to 10 series of numbers whereby each one is incremented differently. As for a list of names, you may engrave a series of plates and the numbers attributed by the incrementation program will be engraved on the desired point on each plate.



With this menu you can engrave a list of names previously established into a plate matrix set on a support plate.



With this menu you can engrave a succession of numbers, having previously prepared one or more incrementations, in a matrix of plates set on a support plate.

These sub-programs can be edited either before or after the preparation of the fixed text from the D screen.

However, we advise you to begin by preparing in "MATRIX" (G), because the software will lead you through a succession of operations and you do not risk forgetting a step.

PREPARATION OF THE ARRANGEMENT OF THE PLATES

This program enables you to make an engraving of various labels or plates on one single support plate, either identical, or incremental (numerical series or a previously established list, see "NUMBERS" and "LIST").

This programme automatically optimizes the division and the drawing of the engraving in relation to the respective dimensions of the support plate and the plates to be engraved.

This screen may either be filled in before or after having prepared the text of the basic plate.

MATRIX

1 PLATE TO ENGRAVE LENGTH300.00

2 PLATE TO ENGRAVE HEIGHT200.00

3 TOTAL NUMBER OF PLATES1

4 NUMBER OF PLATES ON LENGTH1

5 EDGE VALUE.00

6 SPACE BETWEEN EACH PLATE.00

7 BEVELLING MODETOTAL
PARTIAL
NO BEVELLING

8 BEVELLING MILLING & PLATE LOCATIONSOPTIMISED
NON OPTIMISED



Enables you to enter the sizes of the support plate. Validate at the end of the keyboard entry. These values are automatically transferred to screen C. The basic dimensions of the vacuum table (300 by 200 mm) are prerecorded otherwise.



Enables you to indicate the number of basic plates to be fit into the support plate.
Enter the number, then validate.
Default setting is 1.



Enables you to indicate the space taken by the basic plates in the support plate by indicating the length to be divided by the number of basic plates.
Type the number and validate.
Default setting is 1.



Enables you to set a security margin between the margins of the support plate and those of the tangential basic plates.
Enter the value on the keyboard and validate.
Default setting is nil (.00).



Enables you to indicate the distance (or space) to be respected between two basic adjacent plates taking into account the thickness of the saw or the cutting.
Enter the value on the keyboard and validate.
Default setting is nil (.00).



Indicates if the machine should engrave the physical representations of the axes (cutting edge) of the basic plates.
The VX can do this either "TOTAL" (meaning to let it execute a bevel cut and/or the precut), or "PARTIAL" in which case it only traces the four corners of each plate, or the machine does not execute any engraving of axes ("NO BEVELLING").
The choice can be made by typing as many times as necessary the key to display the chosen option in "inverse video" on the screen.
No validation is needed.



Enables you to have the machine engrave the plates in optimal order (return on the second line from right to left and "top against bottom") or, on the contrary, to have it make a longer engraving way, but with all plates oriented in the same direction.

OPTIMISED

MATRIX	MATRIX	MATRIX
MATRIX	MATRIX	MATRIX
MATRIX	MATRIX	MATRIX

NON OPTIMISED

MATRIX	MATRIX	MATRIX
MATRIX	MATRIX	MATRIX
MATRIX	MATRIX	MATRIX

DISPLAY OF MATRIX PLATES

Once the G/A screen filled out and verified, type the key corresponding to the appropriate menu for the following step. (Most often this will be "D").

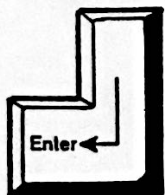
A confirmation message will be displayed at the bottom of the screen and enables you to modify again certain data.

- MATRIX -	
1 PLATE TO ENGRAVE LENGTH	48.00
2 PLATE TO ENGRAVE HEIGHT	20.00
3 TOTAL NUMBER OF PLATES	17
4 NUMBER OF PLATES ON LENGTH	5
5 ENCE VALUE	2.00
6 SPACE BETWEEN EACH PLATE	2.00
7 BEVELLING MODE	
TOTAL PARTIAL NO BEVELLING	
→ MASTER PLATE MINIMAL LENGTH	214.00
→ MASTER PLATE MINIMAL HEIGHT	92.00
(ENTER) = CONTINUE (ESCAPE) = RE-EDIT MATRIX PARAMETERS	



- Enables you to return to the G/A screen and to modify certain data which were previously entered.

Then you may call the menu needed for the next step and to get the confirmation message displayed at the bottom of the screen.



- Validates the information entered on the G/A screen and enables you to visualise the lay-out of the basic plates on the support plate.

This intermediate screen enables you to visualise the data entered on the G/A screen and particularly the number of basic plates desired in the length of the support plate (choice 4).

At this moment, it is possible to return to the previous G/A screen to modify certain numerical data and particularly to try out a different lay-out by leaving the least lost material possible.

(ENTER) = CONTINUE (ESCAPE) = RE-EDIT MATRIX PARAMETERS

NOTE:

When choice 7 is followed by an engraving of axes (total or partial), the engraving table will work with the technical data (speed, depth and temporisation) entered for the LAST PASS.

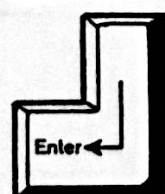
In the case of one single engraving, its technical characteristics will be resumed.

The engraving table always marks a pause before beginning the engraving of the axes (which it will execute last). This enables the eventual change of a tool.

The engraving of the axes start by pressing the "START" key on the command table.



- Enables you to return to the G/A screen and to modify certain data which were previously entered.



- Displays the menu needed for the next step.

Please remember that the G/A screen can be filled out before or after the preparation of the basic plate.

ENTERING A LIST OF NAMES

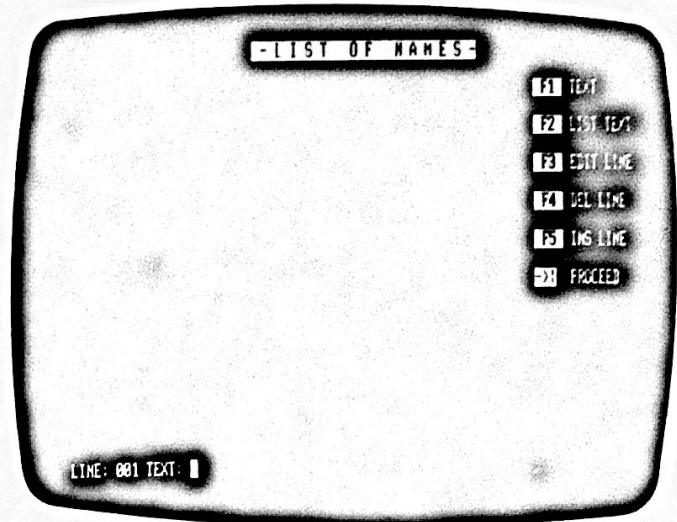
The establishment of lists of names or of variable labels which have to be engraved subsequently is always done by the intermediate of the MATRIX program (screen G) by choosing:

- choice B if the sequence must be engraved in independent plates, or
- choice D if the sequence has to be engraved on a support plate comprizing a series of basic plates.

In both cases, the preparation of the list of variables is identical.

Once the keys B or D are pressed, the display shows the table for the entry of the varying text.

This table contains a menu with 6 positions.



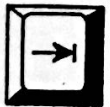
Enter the text and validate after entering; the number and the name will be displayed on the screen. The following name may be entered immediately after, without needing to type "TEXT".

You may enter up to 400 names of 30 characters each.

To leave this screen (e.g. at the end of the list), type:



and then



and you will return to the "D" screen if you were in "G/A" or to the menu for preparing the plate, if you were in "G/D".



By typing this key you may continue a list of names which you had previously started.



By typing this key, you may display the list of names for consultation. If the list is long and cannot be displayed entirely on the screen, type the **space bar** to have the names scroll on the screen.



By typing this key you may reedit a line by calling it by its number.



Used to delete a line. The following lines change numbers and fill out the empty space.



Enables you to insert a line between 2 others. The new name will take the place of the line whereto the number was attributed and will push it down one ranking, as well as all following lines.

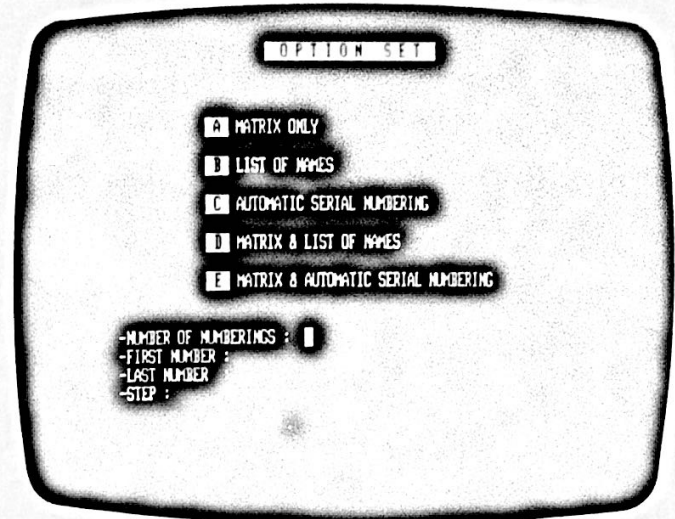


Hit after "ESCAPE", this enables you at any time to leave the screen for the preparation of lists of names, in order to prepare the next step.

To erase the list of names hit "ESCAPE" and then simultaneously "CONTROL + DELPROG".

AUTOMATIC SERIAL NUMBERING

When you are in screen G and you type either C or E a window will appear at the bottom left of the screen, which enables you to prepare series of numbering.



- NUMBER OF NUMBERING

You may prepare up to 10 parallel series of numbers which can all be called up independently one from the other.

First of all, indicate the number of series desired, then validate.

- FIRST NUMBER:

This means the first number of the desired serial numbering.

Each number may contain up to 8 digits.

Validate after entry.

- LAST NUMBER:

This number corresponds to the last number which you wish to engrave. If the difference between the last and the first number is not equal to a full number of increments, the series will stop before reaching the last number.

Validate after entry.

- STEP:

When you have entered and validated the pitch, the software displays the screen D if you were in "G/C", or the menu for preparing the plate, if you were in "G/E".

NOTE: When you have entered and validated the number of series, you can no longer quit this menu unless you have completely filled out the chosen series.

UTILIZATION OF LIST AND NUMBERING

Exploitation of lists of names and incrementations within a fixed text.

The position of varying texts and the numbers of a serie are prepared on screen "D".

LISTS OF NAMES:



To call up the names of a list, you hit this key while you are on the text line, on the desired position.

On the TEXT line, the sign " [L] " appears on the position where the variables must be inserted and when you validate the text line, the first name of the list will appear in its place when representing the plate on the screen.

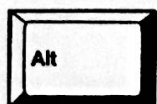
Leave enough room for the longest name.

At the moment of engraving, the names which were previously written in the list, will be subsequently substituing " [L] " in their order of filing.

SERIES OF NUMBERING:



Calling up the first serie,



Calling up the second serie,

etc...

As in the case of a list of names, this instruction has to be inserted into the line of text at the position of the serie of numbers.

The sign "1" (number underlined) will appear in the text line for the first incrementation, the sign "2" for the second, etc...

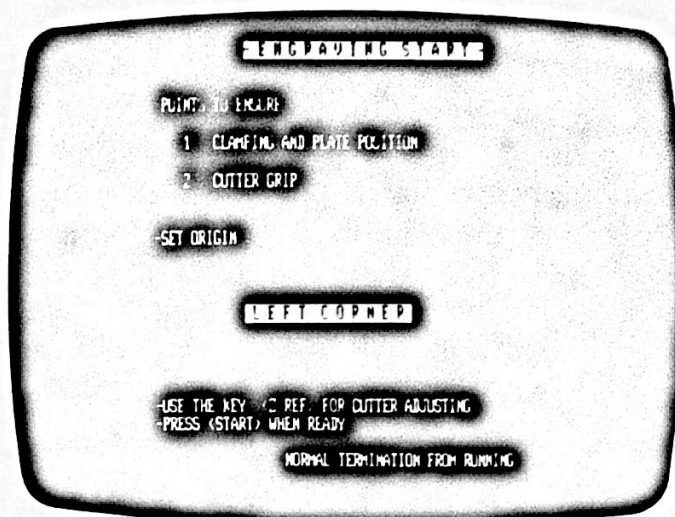
COMBINATIONS:

In a fixed text, or on the same line, you may prepare together the commands calling up a serie of names, and the incrementation of numbers.

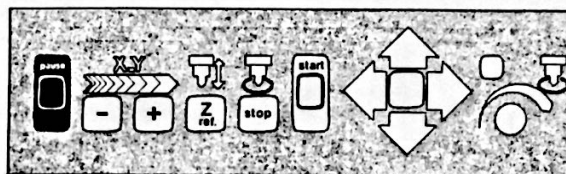
Section 5 - WORK ON ENGRAVING TABLE

PREPARATION

After pressing key "G" from screen E, and once the transfer confirmation message for the engraving table is displayed on the screen, it means that the console has completed its share of the work and operation control is transferred from the console to the engraving table, which is now AUTONOMOUS.



Complementary instructions to the job prepared with the console are given from the control table.



Here is the succession of operations to accomplish before starting engraving (as indicated on the E screen) :

1. **PLACE THE PLATE TO BE ENGRAVED ON ITS SUPPORT** (table or clamp).
Be sure to arrange it according to the chosen origin point.
Think to turn on the vacuum pump if you are using a vacuum table.

2. **CHOOSE** and fit the cutting tool in the spindle, locking it with the cutter knob.

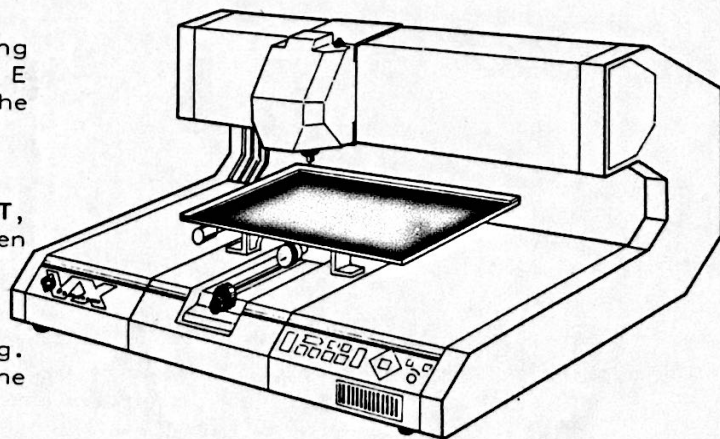
3. **CHECK THE ORIGIN SETTING** and coherence with the position of the plate, and its attaching mode (LH corner with vacuum table or center with clamp).

In the event of manual origin setting using the X/Y shift keys of the table, use the central key at the same time as the direction keys to quickly reach the approximate "floating" origin; then, correct this position with the shift keys.

4. **SET THE VERTICAL "ZERO" POINT**, remembering that the depth of cut displayed on the E screen is the supplementary distance that the spindle will drop beyond this "zero" point.

5. **CHECK THAT THE MOTOR LAMP IS LIT**, indicating that the spindle is turning when you start engraving.

6. **PRESS THE "START" KEY** to start engraving.
Your VX machine will then execute the programmed instructions on its own.



NOTE : As long as the console is connected, and until the engraving table has received new instructions, the "START" key will restart the engraving underway, on the first line.

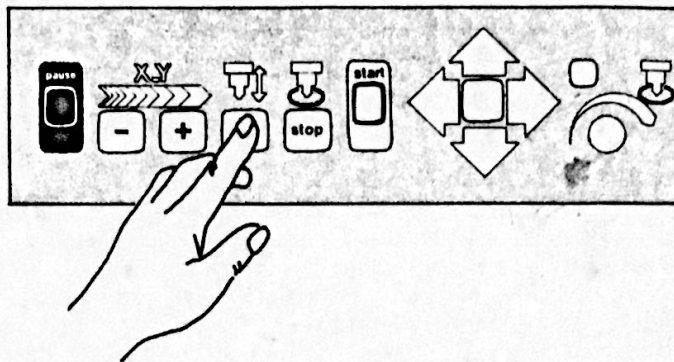
To resume one or several particular lines, return to the VX software E screen and type figure 7 to indicate the numbers of the lines to be reworked.

ADJUSTMENT OF THE VERTICAL ZERO POINT

The principle consists in lowering the tool/spindle assembly to the point chosen as vertical origin. Lowering is accomplished by releasing the motor (by pressing the "Z ref" button), and then pressing the + button on the control panel of the table. The spindle comes down slowly at the beginning, and then with increased speed. The - button raises the cutter in the same manner.

When the "zero" point is reached, press the "Z ref" button again; the spindle rises automatically.

To engrave, the machine lowers and takes into account the depth of cut previously recorded (E screen, choice 4).



The lowering of the spindle assembly can also be made by turning the knob placed above the casing of the spindle.

Note: Pressing the "START" instead of the "Z ref" button, when the zero point is reached, starts immediately the engraving.

There are **two possibilities** for adjusting the "zero point", depending on whether the spindle is equipped with a regular "nose" or not;

With a "nose" :

- set the Vernier (see p. 7) to zero,
- without cutter, lower the spindle until the nose comes into contact with the surface of the plate to be engraved (the pressure spring should hardly be active),
- assemble the cutter in the spindle (cutter knob not locked) and let down the cutter in contact with the surface of the plate to be engraved. Then lock the cutter with the cutter knob,
- press the "Z ref" button again to record the zero point,
- turn the "Vernier" to raise the nose by a distance equal to the depth of cut provided for, and set the adjustment obtained in this way with the micrometer screw.

Note : It may be wise to enter a depth of cut (E screen, choice 4) slightly greater than that set, in order to account for any variations in the thickness of the plate.

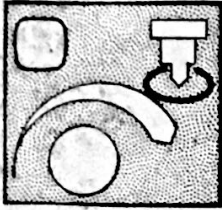
Without "nose" :

- without cutter, lower the spindle near to the surface to be engraved,
- assemble the cutter in the spindle until it comes into contact with the surface to be engraved, and lock it with the cutter knob,
- press the "Z ref" key again (or "START").

NOTE : Make (if possible) this adjustment above the point where engraving will start. To do this, press "START", then immediately afterwards "PAUSE". In this case, it doesn't matter if the tool has begun to cut into the plate surface, because the "START" control will bring the cutter back to this point to begin its engraving path.

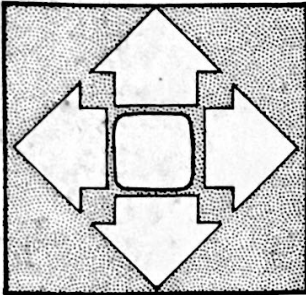
CAUTION : Before engraving, it is important to close the spindle protective cover, to avoid chips in the mechanical parts of the spindle assembly.

THE CONTROLS



Adjustement of tool rotation speed.

This control is active when the indicator lamp is lit.



X/Y plane shift keys

Each key activates the X and Y control screw stepper motors for manual shifting of the spindle over the engraving area.

The central key, when pressed at the same time as one of the X/Y keys, allows fast shifting in the chosen direction.

The set of keys, known as the **"JOY STICK"** in the VX software, is used for manual adjustment of the **"RELOCATABLE"** origin point (screen B, option 3).

Note : E6 resets the RELOCATABLE origin point.



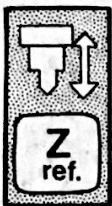
Engraving start key.

After the checks indicated on the screen for transfer of a job to the engraving table are completed, press this key to begin engraving.



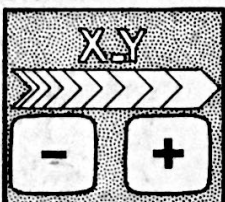
Drive motor stoppage during tool rotation.

The indicator lamp to the right of the panel lights up after this key has been used.



Adjustement of spindle vertical "zero" point.

When pressed once, serves to manually lower the spindle; when pressed again, records the position of the spindle at that time and considers the position as the starting point for the depths of cut programmed with the E screen.



Variation of spindle speed of movement over a surface to be engraved. The speed varies as long as key is held down (decrease by - and increase by +).

Lowering (+) or lifting (-) of the spindle/tool assembly, after pressing Zref.



Immediate stoppage of engraving and lifting of spindle.

The **"START"** key is used for resuming the execution of a job underway at the point where it was left off.

If one of the X/Y shift keys is operated at this time, the position underway is lost in memory, and the spindle returns to its position above the **ORIGIN** point. From then on, pressing with the **"START"** key will cause the work to begin again from the beginning.

A FEW SUGGESTIONS

1. FLOPPY DISC MANAGEMENT

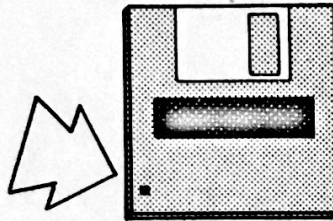
There are three types of floppy discs, all comprising the same model :

- "PROGRAM" discs containing VX software (standard, professional, "copy" or digitizing).
- "CHARACTER" discs storing character sets (fonts)
- "JOB SAVE" and "JOB-DIGIT" discs for saving your personal jobs as they are carried out.

Use only the floppy discs supplied by your GRAVOGRAPH dealer.

A floppy disc type cannot be used instead of another. The references are given on the label to one face.

It is possible to inhibit writing onto the floppy disc by releasing the plastic tab placed on one side.



We suggest that you note on the labels of your "JOB SAVE" floppy discs, a reference indication (number or letter) referring to a notebook or log in which you detail the various jobs recorded in this way (name under which the work is saved, model, type, set of characters, customers, date, etc.). This will make it easier for you to find the floppy disc containing the job you wish to rerun.

2. VX SOFTWARE

You will quickly get to know the main key functions by heart (enter, escape, etc.) as well as the connection between the letters and the various screens of the tables or menus.

The D screen will soon become familiar to you; with this screen, you can prepare and check your work; the screen displays the real form of the engraving.

On this D screen, two function keys (numbered) are absolutely essential; key F1 for the line of text to be engraved and key F12 for the character height.

Finally, the movement which consists in pressing the "TEXT" key (and checking the line number in progress by glancing quickly at window F1 on the screen) before any entry is made on the character to engrave keyboard, will soon become a reflex.

3. ENGRAVING TABLE

With the control table, you can intervene manually at any time in the engraving process. When you wish to stop a job being executed, get into the habit of using the "PAUSE" key. The spindle lifts instantaneously and work can be resumed where it was left off, by simple pressing the "START" key.

However, after a "PAUSE", it is possible to resume work from the beginning (the spindle returns to the origin point defined with the VX software), by pressing one of the X/Y shift keys before pressing the "START" key (**CAUTION** : the coordinates of the point where the "PAUSE" key was pressed are then lost).

ADJUSTMENTS

Two types of adjustment may need to be made to the engraving table :

1. POINT OF ORIGIN ADJUSTEMENT.

This involves the setting of the X and Y limit switches so that they switch on by the end of the lead-screws.

a) The spindle must be carefully set to the ZERO position (LEFT-HAND CORNER) by lining it up with the flat face of a milling cutter accurately positioned inside the angle formed by the vacuum table's two reference rulers.

b) Using an Allen wrench, adjust the X limit switch so that it just activates at this precise position.

Access is gained to this switch by removing the left hand cover on the "swan neck" spindle support.

c) The Y switch is adjusted by tipping the machine onto its right side (i.e. control panel side).

This switch is located between the two "Y" guide rails and it must be adjusted so that it switches at this precise spot.

2. ADJUSTING THE VERTICAL ENGRAVING PRESSURE.

The cutter head comprises 2 systems to control the pressure applied by spindle/tool assembly to the material to be engraved :

- pressure adjustment in the range 200 to 600 g (7 to 21 oz) is provided by a pressure spring and associated knurled control knob. (spring tension adjustment thumbwheel see p. 7)
- once this spring has been tightened to maximum, a set of three washers provide adjustment in the range 1,5 kg to 3 kg (50 to 105 oz.) using the same control knob just above the regulator "nose".

MAINTENANCE

- Your Vx is a sturdy, but sophisticated machine designed for problem-free service over a long period of time.

Please note the following recommendations :

Maintenance operations to be carried out before each engraving run.

- Check that the tool is correctly secured and the position of the zero point.
- If a vacuum table is used, check that the vacuum surface is clean and that the plate to be engraved is securely held in position.
- Follow the directions systematically displayed on the "START ENGRAVING" screen.

Daily maintenance.

- Clean the work area around the table using compressed air, taking care not to blow residual material onto the console.

Routine maintenance (frequency depends on in-service use).

- Check the condition and tension of spindle drive belts and replace if necessary.
- Clean the two vertical spindle guide rods with compressed air and wipe dry. Then lubricate them with very light SINGER type oil applied lightly by finger.

Do the same for the spline arbor on the spindle pulley drive.

- Likewise for the X-axis guide rails (remove the guide rail top cover by unscrewing four screws) and also the Y-axis guide rails located underneath the machine (tip machine onto its side).
- Check that the spindle rotates freely, and if necessary, pull out the circlips and remove the moving part.

Clean with compressed air, wipe dry and lubricate as above, then replace. Do not forget to fit circlips.

- Check for play in the vice jaws and if necessary tighten the corresponding clamping gibs.

To do this, the vice must first be detached from the assembly by unscrewing each of the three clamps securing it to the guides (on the right side) by about 1 mm (0,04"). Withdraw the vice by pulling it forward.

Adjust the gibs by tightening up the four screws on the left-hand side of the vice.

Fit the vice back onto the machine; slide it onto the guides and push it up to the top. Tighten the three guide clamps.

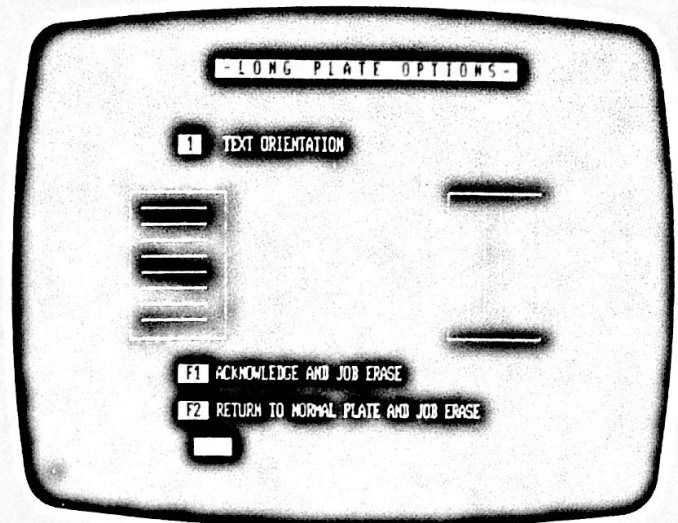
Section 6 - PROFESSIONAL PROGRAM

LONG PLATE

By typing the key H, a menu is displayed which allows the engraving on a plate of the following dimensions:

300 x 600 mm.

The plate can be engraved either from top to bottom or from left to right. This choice can be made by typing key 1, which provokes a bright window to be placed under the image of the engraved plate, either in height or in length.



By hitting this key you confirm your wish to work on a long plate; it deletes all work executed before and still in memory, and displays the main menu.

All displays containing numeric dimensions are automatically modified and contain maximum admitted values for the large plate, i.e. 300 x 600 mm.

These values may be modified (on display "C"), as is the case for work on a normal plate.

Note: For a plate engraved in length, the "ENGRAVING MODE" (display B choice 1) is automatically selected in "AXIS SWAP". You may modify it by choosing the "REVERSE AXIS SWAP", but the "NORMAL" and "REVERSE" modes **should not be called**, because the engraving table would block during the engraving procedure.

Of course, for a plate which is being engraved in height, the inversed modes are not allowed.



By typing this key, you recall the program for a normal plate, and you **entirely** delete the work on the long plate, which you have done so far. Do not forget to save it before, if necessary.

The preparation of your text is done exactly in the same way as for a normal plate, by entering the necessary values on displays B - C - D.

All functions of the "D" display (F1 to F13) are operational.

A few restrictions:

The space used for characters and logo must not exceed 200 mm (in width for plates engraved from left to right, in height for plates engraved from top to bottom).

Note: by "space" we mean the width of the character plus its normal blank space.

Circular engraving is only possible on the first 200 mm of the plate.

The "MATRIX" functions are not available.

The origin of the engraving (display B choice 3) must be "LEFT CORNER".

GENERAL REMARKS

The engraving procedure is normally started by E6.

However, the way of fixing the plate is of course different.

Please bear in mind that the plate will have to be moved during engraving, because the surface covered by the spindle remains 300 x 200 mm.

Therefore it is recommended to use the T-slot table which allows for easy movement of the plate.

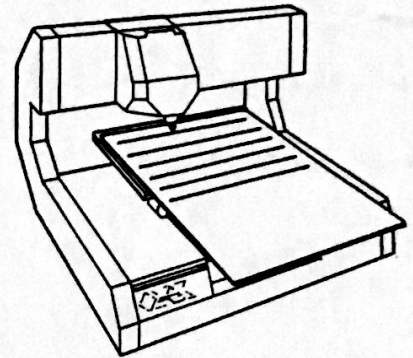
Make sure that there is enough room around the machine, because a long plate will stick out in front and at the back of your machine.

The plate should be moved within the X axis, with sufficient precision, so that there is no apparent break in the lines. Check and adjust, if necessary, the parallelism of the reference points.

2 CASES MAY OCCUR

1. The text is oriented on a plate from top to bottom.

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In this case, the plate should be fixed with the upper left corner on the original point of the engraving table.

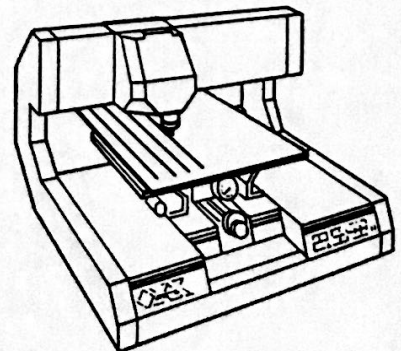
Engraving starts at the top of the plate and, after finishing the first line (max.: 200 mm), a message will be displayed demanding the displacement of the plate.

The software will calculate and decide the length of each line and the number of lines.

Whatever the message, it will appear at the bottom of the display.

Move the plate according to the demands made by the machine, and press "START".

2. The text is oriented on the plate from left to right.



In this case, the engraving will be executed **automatically** in "AXIS SWAP", and the plate should be fixed with the upper left corner on the bottom left angle of the engraving surface.

Engraving will start at the left of the plate, and the instructions for the transfer of the plate will be identical to those for a plate engraved from top to bottom.

ARC ENGRAVING

The VX software (professional version) enables the execution of arc engravings. Composition and lay-out of the text to be engraved are done from display "D", exactly as for the more traditional engravings.

Only those elements used for defining the size and form of the arc are specified.

ARC ENGRAVING PROGRAM

The preparation of a text in arc is as follows:

- work in **MANUAL** mode (display C figure 1)
- reserve **one line** (F1) per arc

Note that various arcs may be engraved on a single plate and that arcs may be inserted between normal straight lines.

- choose the position of the arc and enter the values in F2 and F3.

after this:

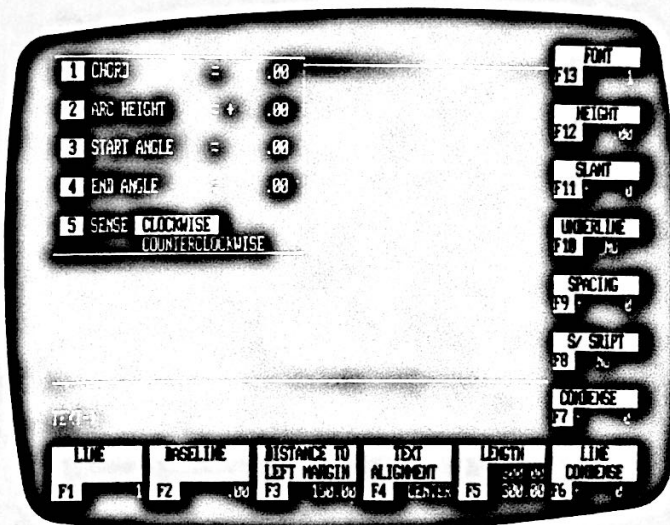


shows at the upper left of the display D, the "auxilliary menu" for arc engraving.

The characteristics of the arc are defined by points 1 to 5. These values determine part of the arc (or the entire circle) wherein the text may be introduced. The text does not have to occupy the entire space. If the text in normal characters is longer, it will be automatically condensed.

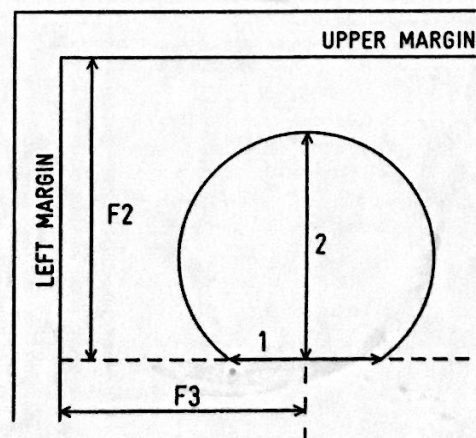
The length of the arc which has been prepared is shown in F5.

By typing any key other than 1 to 5, you will return to the normal D display.



In fact, the dimensions and the position of the arc onto the plate are entirely defined by means of the following 4 entries:

- 1 CHORD
- 2 ARC HEIGHT
- F2 BASELINE
- F3 DISTANCE TO LEFT MARGIN



DESCRIPTION OF THE ARC ENGRAVING MENU



Allows to enter directly the chord, i.e. the width of the base line of the circle.

Do not confuse this with the diameter.

Validate after entering.



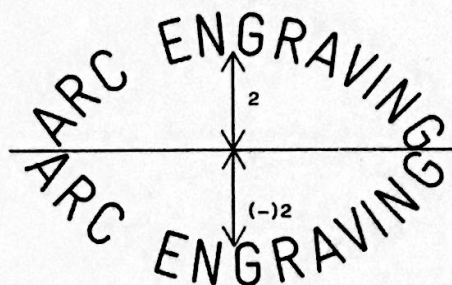
Height of the arc, calculated from the base to the top of the arc.

Do not confuse this with the radius.

Always vertical, whatever the angular position of the text.

You may introduce a negative (-sign) value, which will create a symmetrical arc, under the base line.

Validate after entering.

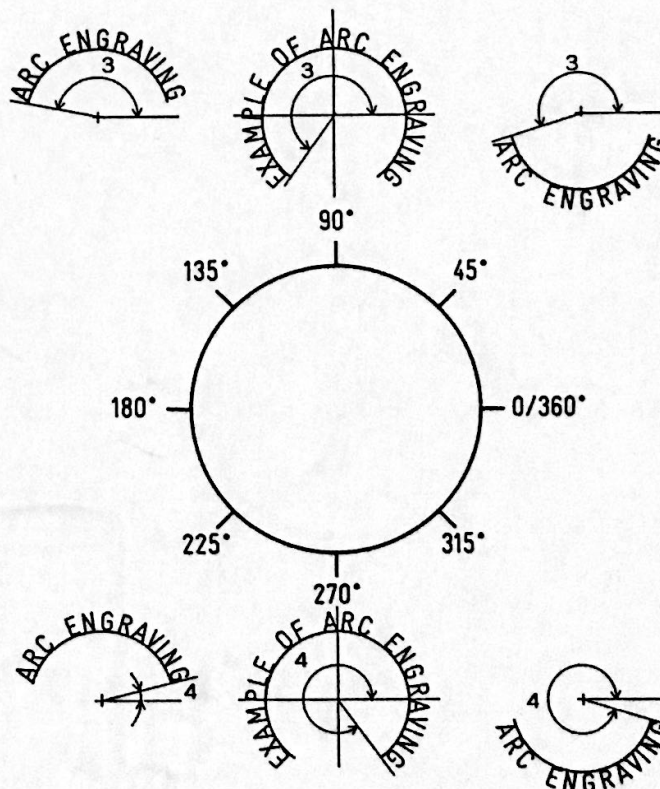


Start of text angle.

A zero is always placed at 3 o'clock, and the angles are measured counter-clockwise (zero in the trigonometrical sense), even in the case of a negative height.

This angle is calculated by the software in relation to the values entered in 1 and 2. It can be modified manually, but only to diminish the length of the programmed circle.

Validate after entering.



End of text angle.

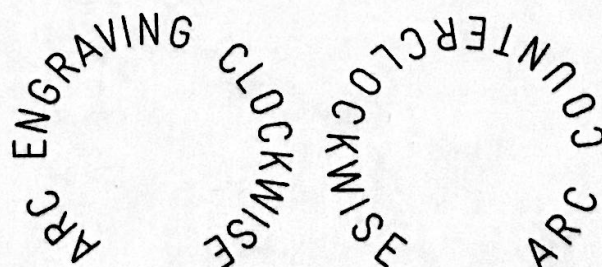
Calculated by the software in the same way as the starting angle, can equally be modified to diminish the length of the circle.

Validate after entering.



Enables the modification of the sense of engraving. By simply hitting this key, the direction will be changed from CLOCKWISE to COUNTERCLOCKWISE.

There is no need to validate this change.



To return to the normal "D" screen, for composition of your text, hit any key (except of course the keys 1 to 5).

TO ENTER TEXT

The characteristics of the arc (introduced in F16) can be entered before or after text preparation. The values in F16 only affect the line displayed in F1 during preparation in F16. Modifications and corrections can be made at any time.

All functions (F1 to F13, as well as ZOOM) are available and have the same effect on the text as in the case of normal engraving. Only the F10 function (underlining) is different, its task being primarily the engraving of part of a circle (or an entire circle).



Moves the position of the arc, as in the case of a normal line. Particular attention has to be paid to not bypass the upper and bottom margins (risk of "BUS ERROR").

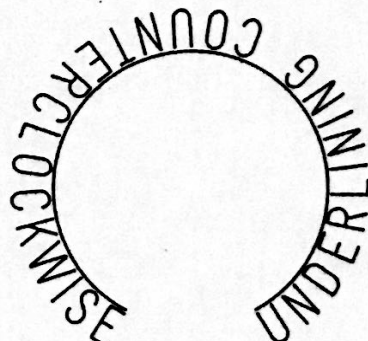
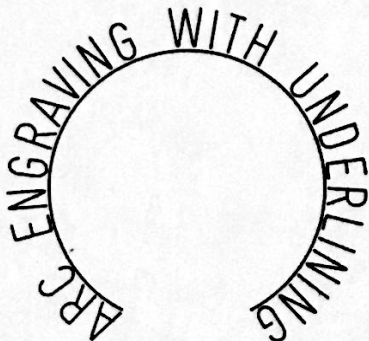
Particularities of the underlining

The line created by the F10 function entirely fills the arc defined by point 1 to 4 of the auxiliary engraving menu. If the text is shorter and you wish to limit the underlining to the length of the text, you have to adjust the values of the start and end angles.

A circle or part of a circle may be created by simply hitting F10, and by entering a value or not, then by typing TEXT and spacebar once. After validation, the underlining will occupy the space available for the circle.

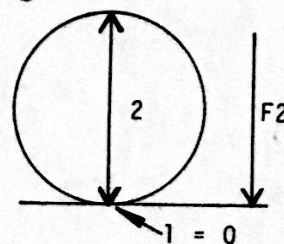
This enables you to visualise on the screen the geographical position of the arc which has thus been defined.

Note To avoid overlapping, characters are **ALWAYS** engraved **INSIDE** the reference arc, even when writing COUNTERCLOCKWISE. In practice, this means that the CLOCKWISE underlining becomes a COUNTERCLOCKWISE overlining.

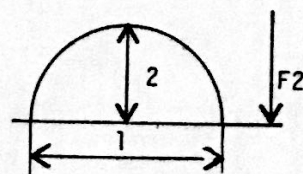


Particular cases

An **entire circle** may be obtained by defining a chord line equal to 0 and a height of arc equal to the diameter of the circle.



Half a circle may be obtained by defining a arc height (2) of half the value of the chord (1).



The text may be positioned **at the left** or **at the right** of the zone prepared in F16, or **centered**. Positioning is done by the F4 key (CENTRE, LEFT, RIGHT).



PARTIAL GRAPHICS LAYOUT

On screen "B", choice 5 enables you to work in partial graphics layout mode. This procedure saves time when preparing the plate on screen "D", especially when there are many lines and with multiline characters.

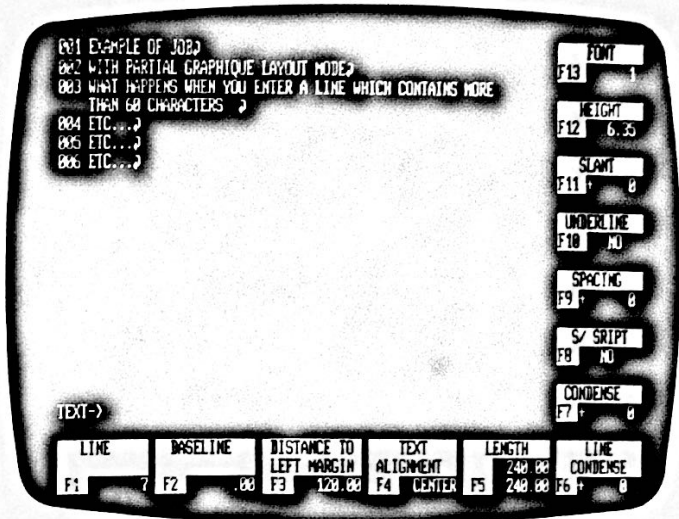
This procedure, on the contrary, obliges you to partly work blindly; i.e. that the graphics of the plate is not displayed as the introduction of the lines of text proceeds.

After selecting "PARTIAL" on screen B, normally enter the desired criteria on screen C. When you call screen D, the display of the functions with their windows will remain, but the plate and the margins are no longer visible.

Enter functions F1 to F13, and after this enter your line of text as usual.

When you hit "ENTER", the introduced line is not visible at its position on the plate and with its graphics, but the text is displayed at the upper left of the screen with the same characters as the instructions given on the screen.

The display is instantaneous, whatever the line length, the kind of character used and the number of lines introduced previously.

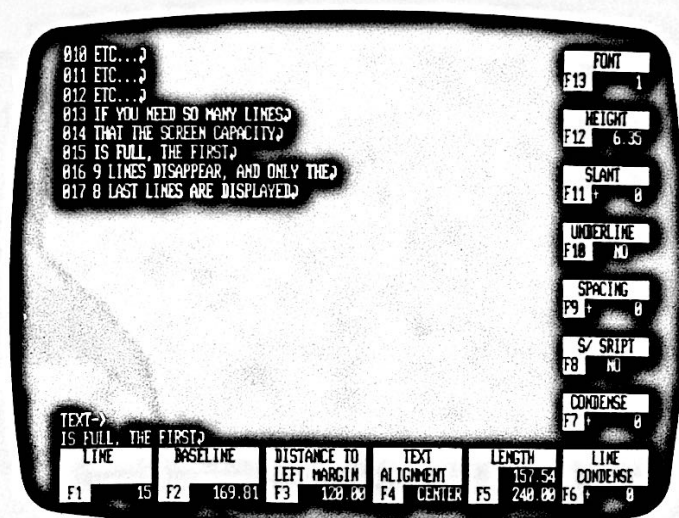


For the second line (as well as for any subsequent lines), check the parameters F2 to F13, then type "TEXT", enter the text, type "ENTER", etc...

The lines will be immediately displayed under the first line after hitting "ENTER", each line with its number at the left of the screen.

The width of the screen is sufficient for 60 characters. If a line is longer, it will be displayed as a second line on the screen.

The screen can display 17 lines (or part of this). If you enter more lines, the first 12 lines will no longer be displayed, but only the last 6.



You can consult the text of the first lines by calling them up with F1, or by



DISPLAY OF THE TEXT POSITION ON THE PLATE

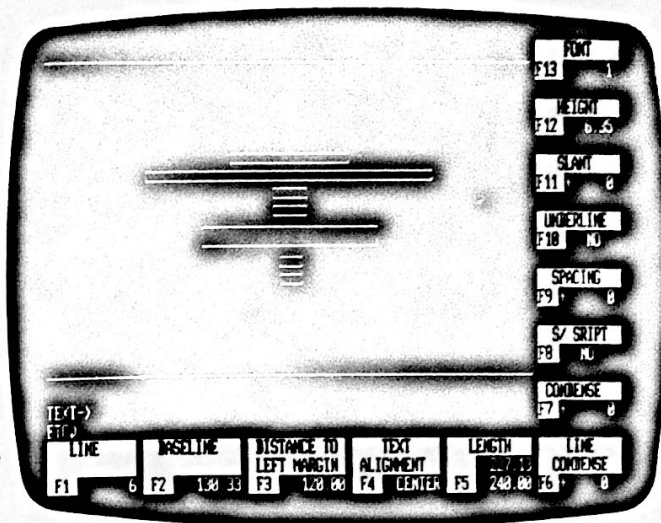


Shows a simplified image on the screen of the position of each line on the plate.

The rectangles represent the space occupied (height, length, width) by the lines.

This function enables you to modify directly the position of the line preselected in F1. (Only in "MANUAL" mode).

The joy-stick (shifting of lines by arrow + ALT) (see p. 24) functions with the rectangle, but the line must be selected before calling F17.



To return to screen D, hit "ENTER". No other screen can be called from F17.

CONTROL OF WORK



You may check at any time the layout of your plate. By hitting F19, the entire plate is visualised on the screen. In principle, this screen serves only for control. However, values may be modified (F2 to F13).

Neither zoom, nor joy-stick are operational.

Please note that the validation of a text line provokes a return to the screen with partial vision. Thus, after entering a value in the functions, **only hit "ENTER" once**, as long as you have not corrected all parameters.

From the F19 control screen, you may call up any other work screen, thus, if the graphics are correct, you may call directly screen "E" to start the engraving procedure.

Remark:

You have the option to pass onto the entire graphics display mode at any time, in order to check the plate in more detail (e.g. use of the zoom).

Therefore, return to screen "B" and once hit "5". When you return to "D", you will return to the normal work screen in total graphics layout mode.

WHAT TO DO WHEN

The message **BUS ERROR** or **ADDRESS ERROR** appears at the upper left of the screen.

The software has been disturbed by an unusual move. A general "RESET" has to be executed with the key at the back of the console (see page 11). The work done so far is unfortunately lost.

NOTE: if the table is in the course of the engraving procedure of a previously prepared job, **WAIT UNTIL THIS ENGRAVING JOB IS FINISHED BEFORE EXECUTING RESET.** You may engrave many identical plate, pressing the key "START".

The engraving table does not react when switching on the console:

- check the fuses (console and engraving table)
- check the electrical power supply connections and the power supply on the table
- if no default can be detected, call you GRAVOGRAPH distributor.
- if none of the step motors function, check the main fuse.

The motor of the spindle does not function:

- check if the indicator light on the motor is on, if yes
- check the fuse of the speed variator by pulling out the electronic drawer containing the commands; the fuse is situated just behind the table.

If all is normal, call your GRAVOGRAPH distributor.

The engraving is not centered or shows overlapping characters:

- check, by typing "PAUSE" and one of the X/Y shifting keys, if the spindle returns to the point of ORIGIN recorded by the VX software.
- observe the functioning of the step motors (particularly if they "grumble").

If nothing appears abnormal, and, if the problem persists, call your GRAVOGRAPH distributor.

The vacuum table functions badly:

- check the functioning of the vacuum pump (and particularly the tightness of the air circuit)
- check the cleanliness and the general state of the rubber mat, and, with a needle, perforate again some of the holes

If nothing abnormal appears, call your GRAVOGRAPH distributor.

It is difficult to move the spindle downwards or upwards:

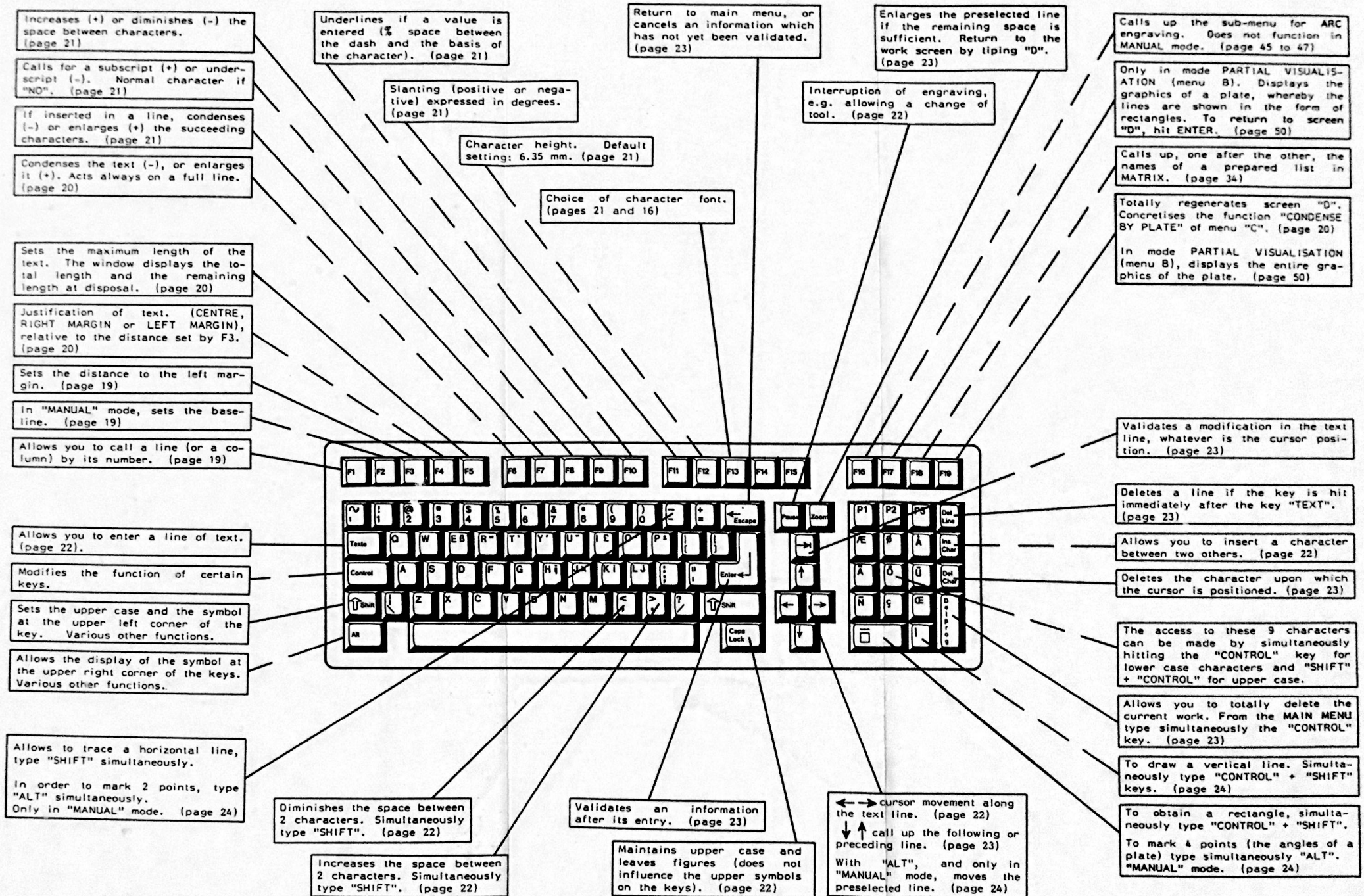
- check the tension and the state of the drive belts
- check the vertical free movement around the spline arbor.

Lubricate if necessary and if this does not help, call your GRAVOGRAPH distributor.

NOTE: for each call, please describe the default and its symptoms exactly.

GRAVOGRAPH DISTRIBUTOR:

FUNCTION KEYS OF THE KEYBOARD



OPTION 6 - CAD TRANSFER PROGRAM

Prefatory note: this program should be used by people who already possess a CAD system generating HPGL format files.

You have chosen to purchase a Gravograph CAD transfer program. We have no intention to tell you the merits of such a choice; you know better than we do the capacities of your own CAD computer equipment and you must have discovered its various advantages.

You now want to engrave on your Gravograph VX machine a logo, drawing, or even plan which you have formerly created on your computer by means of your CAD program, and you wish to concomitantly increase the digitizing capacities of your Gravograph VX system.

By purchasing the Gravograph CAD transfer program you make it possible to totally integrate your engraving service, which becomes an element compatible with all your equipment.

The productivity of the Gravograph engraving machine associated to the capacities of your CAD system is going to be the trump-card of your Business activity.



CONDITIONS OF USE

USES

The Gravograph CAD Transfer Program will enable you to use your CAD created jobs in two different ways: you can either engrave directly on a Gravograph VX machine, or you can save the drawing on a JOB DIGIT disk (logo saving disk) which will be used later on to engrave with a Gravograph VX program.

Transfer + direct engraving

This is exactly corresponding to the plotter use.

Transfer + job save + engraving

This enables you to store the job on a JOB DIGIT disk; it becomes a logo which can be used with the Gravograph VX Digit program, modified if need be, then engraved directly or stored again to be called by means of the Gravograph VX engraving program.

To use a logo stored on a JOB DIGIT disc in the best conditions, you should be provided either with an 04. version of engraving program or with a recent digitizing program (from the DG 02.19 version) in which the memory capacity has been increased to 9999 points.

Note: The capacity for jobs digitized with the Gravograph VX equipment (digitizing table and program) remains as usual: 999 points.

This use is also applied to storing a file on a hard disk. It demands these program releases :

HPGL transfer	DG CAD	01.08
hard disk management	G-HD	01.11
engraving	HD	04.22
digitizing	DIGIT0	2.30

EQUIPMENT

Computer network

You should be equipped with a CAD program which is compatible with the HPGL format (which is the case of most software on the market), and with a computer which has an RS 232 serial output.

Gravograph equipment

All you actually need is a Gravograph VX controller; the engraving table model is of no consequence: it can be either a Gravograph VX old version (engraving area 200 x 300 mm), or a Gravograph VX 1989 model (engraving area 350 x 300 mm), or a Gravograph VX2 table (engraving area 650 x 490 mm) or even a Gravograph VXM+ (engraving area 150 x 200 mm).

On the contrary, if you wish to store your job on a JOB DIGIT disk you should possess the latest versions of programs (PR 04. for the engraving program, or DG 02.19 for the digitizing program).

Content of packages and connections

Enclosed with the DG CAD transfer program you should receive a connection cord equipped with two RS 232 output connectors which go plugged for one end to the computer, for the other end to the Gravograph VX controller.

STARTING THE DG CAD PROGRAM

ON THE STANDARD CONSOLE

Insert the DG CAD disk into the VX drive and hit any key. It loads the program and the following screen appears :

ON THE HARD DISK CONSOLE

WARNING ! This 01.08 DG CAD release works only with the 01.11 G-HD program.

Insert the DG CAD disk into the VX drive.

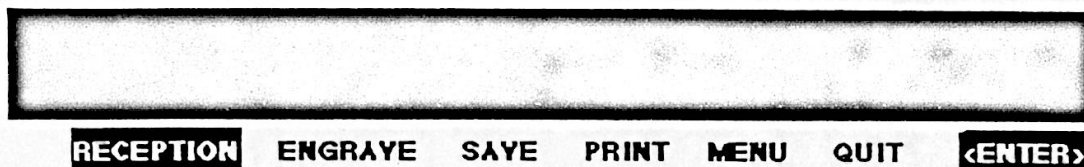
From the G-HD management menu, select the COPY command and validate by Enter.

Select DISK as source and validate.

Select HARD DISK as target and validate. The program is stored in the hard disk.

Select the command PROGRAM and validate.

In the PROGRAM directory, point the cursor on the DG CAD name and validate. It loads the program and the following screen appears :



RECEPTION is preset by default. Here is the function of each option :

RECEPTION	Transfer of CAD files
ENGRAVE	Direct engraving
SAVE	Saving and managing CADxy files on a JOB DIGIT disk
PRINT	Printing the current screen
MENU	Describing the transfer parameters
QUIT	GOING BACK TO THE HARD DISK MANAGEMENT MENU (this option is available only on the hard disk console)
ENTER	Reminds you that any choice of an option must be validated.

When you transfer a logo from a micro-computer to the VX console, a window (set before "RECEPTION") gives you in Kbytes the volume filled up by the logo.

Move from an option to another, by pressing the spacing bar or by using the horizontal arrows on the joy-stick. Further to your selection, do not forget to validate it by Enter.

TRANSFER

Until now all the operations you made (creation of the logo with your CAD program and configuration in HPGL bases) could be executed on the computer independently from the Gravograph VX machine. You now have to connect the two elements by means of the connection cord which you have been provided with by your Gravograph distributor (see drawing on page 604).

Once the connection is made, you only have to prepare your Gravograph VX controller for the reception of data and to command the transfer of these data from your computer.

ON YOUR GRAVOGRAPH VX MACHINE

The RECEPTION option is selected by default. Confirm with ENTER.

The screen then displays the following message:

HIT ANY KEY

If you hit the ESCAPE key, you go back to the main menu. Hitting any other key displays the message:

SERIAL CONNECTION AUTHORIZED

Your Gravograph VX machine is now ready to receive the instructions from your PC. Go back to the computer to execute the transfer operation.

ON YOUR PC

Once the DOS program is stored, the screen displays the sign A>.

Type **COPY**, space bar, the name of the file you wish to transfer, space bar, **COM1** (or other number if the Gravograph VX controller is not connected to the first RS232 output of your computer (ex: COPY MIG COM1). After hitting ENTER, the transfer is operating.

RUNNING

On the Gravograph VX controller a beeping and a visual signal indicate that the transfer is being made and a message confirms the correct reception of data:

RECEPTION OVER

If any problem has happened during the transfer, an error message appears:

SYNTAX ERROR

Then hitting any key makes you return to the main menu and you may go through the transfer operation again. On the Gravograph VX controller, confirm the RECEPTION option with ENTER and start the transfer from your computer (COPY ... COM1).

Otherwise, the drawing is displayed with, at the bottom of the screen, a choice of options. The option which is selected is displayed in inverse video.

Thus, you may print (on a compatible printer), save on a Gravograph VX JOB DIGIT disk (to engrave it later on by means of a Digit or an 04. Professional Programs), or even directly engrave your drawing.

DIRECT ENGRAVING

WARNING !

ON CONVERTING A LOGO INTO HPGL LANGUAGE ON YOUR COMPUTER WITH YOUR CAD PROGRAM, TAKE CARE NOT TO OVERPASS THE ENGRAVING AREA OF THE GRAVOGRAPH VX TABLE WHICH WILL ENGRAVE THE LOGO.

When you validate this option, the usual engraving screen appears (refer page 25 of the Main Instructions Manual) but :



Engraving machine

Hit this key to name the working machine among the VX ones.

The VX2 table is called by default : its engraving area (640x490 mm) encloses all the working dimensions applied to the other machines.

When the chosen area is smaller than the logo size, the software suggests you to have your logo reduced .

The Z.axis stroke remains 3.00 mm and can not be modified.

SAVING

IMPORTANT !

When you digitize with your CAD software, control that the logo does not overstep the VX2 format, that is to say 650x490 mm.

Validating this option displays this sub-menu :

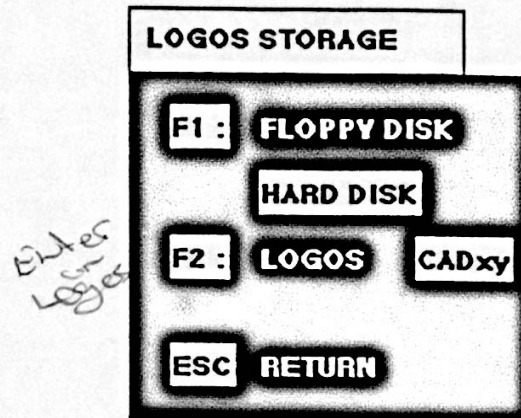


WARNING !

VALIDATING ONE OF THESE OPTIONS CLEARS THE SCREEN FROM THE PREVIOUS JOB.
IF YOU WANT TO SAVE IT OR TO ENGRAVE IT ONCE AGAIN, HIT ESCAPE.

Press Escape to go back to the main menu.

Validating the options A, B or C automatically drives you to the window titled "LOGOS STORAGE".



ESC = RETURN

Hit this key to go back to the main menu.



Hit this key to name :

- the target or the support which will store the transferred logo.
- the source or the support which contains the logo to be deleted or to be displayed.

The possible supports are FLOPPY DISK or HARD DISK, support preset by default.

When FLOPPY DISK (*sole available support on a standard console*) is called, insert the required JOB DIGIT disk into the drive.



Press this key to specify the format of the transferred file : LOGOS (*sole available on the standard console*) or CADxy.

The CADxy format is preset by default.

IMPORTANT ! Choosing the right format

Giving a format to the transferred logo depends on its later use and on its size.

LOGOS : CHOOSE THIS FORMAT WHEN YOU PLAN TO USE THE TRANSFERED LOGO WITH THE ENGRAVING OR THE DIGITIZING VX PROGRAMS.

This kind of use demands that the transferred logo has its height shortened to 50 mm at saving (the initial dimensions are applied as the logo is displayed on the screen).

This program allows a logo which at most:

- fills 30 Kbytes up to be recalled at D-screen by the professional (PR) or hard disk (HD) engraving programs.
- counts 9999 points and fills 80 Kbytes up to be modified by the DIGIT program.

CADxy : CHOOSE THIS FORMAT ONLY TO USE THE TRANSFERED LOGO WITH THE DG CAD PROGRAM.


Stored under this format, the transferred logo is not modified ; the plate dimensions and the type of machine are anyway saved.

Validate the support and the upper selected format. The contents of the called support are displayed on the screen.

When HARD DISK is the support, an inlaid window shows all the stored files.

Thanks to the joy-stick, point the cursor on the required file. Validate.

A small window displays the name file. Change the title, if the displayed file was called by mistake.

Validate by the key . On the screen, the file directory lists all the characters corresponding to the present logos.

When FLOPPY DISK is the support, the present characters are directly displayed on the screen.



LOGO STORAGE

In the LOGOS STORAGE window, input the target, then the format. Validate.

Type the character of the new logo.

With HARD DISK support, select the file which will store the new logo. Validate by the key




and read the contents of the file.



LOGO DISPLAY

In the LOGOS STORAGE window, input the source, then the format. Validate.

Type the character of the logo to be displayed.


With HARD DISK support, select the file which contains this logo. Validate by the key  and read the contents of the file.



DELETE OF LOGO

In the LOGOS STORAGE window, input the source, then the format. Validate.

Type the character of the logo to be deleted.

With HARD DISK support, select the file which contains this logo. Validate by the key  and read the contents of the file.

Working with DG CAD on logos issued under the VX digitizing program.

The DG CAD program allows you to display or to delete a logo digitized with the DIGIT program.

But remember that the DG CAD program refuses some logos : these logos are designed with the circle and the B-spline (curve) functions (points coloured in yellow and numbered 3 or 4). You will never display or delete these logos by the DG CAD program ; if you call this kind of logo, the screen replies you :

NON-AUTHORIZED CHOICE ! RESTART

PRINTING

This option enables you to control the logo quality through its printing.

As you validate, a message "PRINTER CONFIGURATION OK" twinkles and starts the graphic printing by a printer or a plotter.

Check that the printer presents an RS232 serial connexion and that it works on an RTS or DTR protocol (refer to/ the printer instructions manual : control the connecting cable).

MENU : SELECTING THE TRANSFER PARAMETERS

This optional menu helps you to get the VX console ready to receive files. Valid this option and the following screen appears :

The screenshot shows a terminal window titled "==MENU==" with several menu items and their current values:

- Working unit**: 1 HP-GL UNIT 1/100TH UNIT
- RS 232-C device**: 4 CONFIGURATION
- Format**: 2 490X650=YX2 300X350=YX89 200X300=YX 150X200=YXM <OTHER>(hit Space) Length : 650.00 Height : 490.00
- Erasing**: 5 CLR.=CTRL DELPROG
- Origin**: 3 Offset X=+ .00 Offset Y=+ .00

A <ENTER> key is shown at the bottom right.

1

Working units

Hit this key to specify the unit in which the CAD file was digitized and will be transferred : HPGL units or 1/100th millimeter units. Validate by Enter. HPGL units are preset by default.

4

Serial connection and configuration characteristics

Press this key only if you need to modify the present configuration preset by default.

Bits number : 8

Parity : 0

Stop bits : 2

Transmission speed : 9600 BAUDS

Press the spacing bar as often as needed to change the value and validate to move from a characteristic to another.

Notice that the possible values are all preselected.

The last validation brings you back to the main menu.

When you would rather keep the configuration preset by default, hit Escape to go back to the main menu.

5

DEL = CONTROLDELPROG

Hit this key to clear the current job from the screen.

2**Format**

Hit this key and choose the VX engraving area corresponding to the printing format of your CAD software. The VX2 area is preset by default. Validate.

IMPORTANT ! The chosen VX engraving area must be equal to or greater than the CAD format.

When the input format is below the logo size, the VX2 area is by default applied.

When you would rather choose an engraving area different from the possible ones, go to "OTHERS". Press the spacing bar to validate.

In accordance with the VX2 engraving area (650x490 mm), input the length and the height of the plotting format of your CAD software.

3**Origin and logo location on the VX screen**

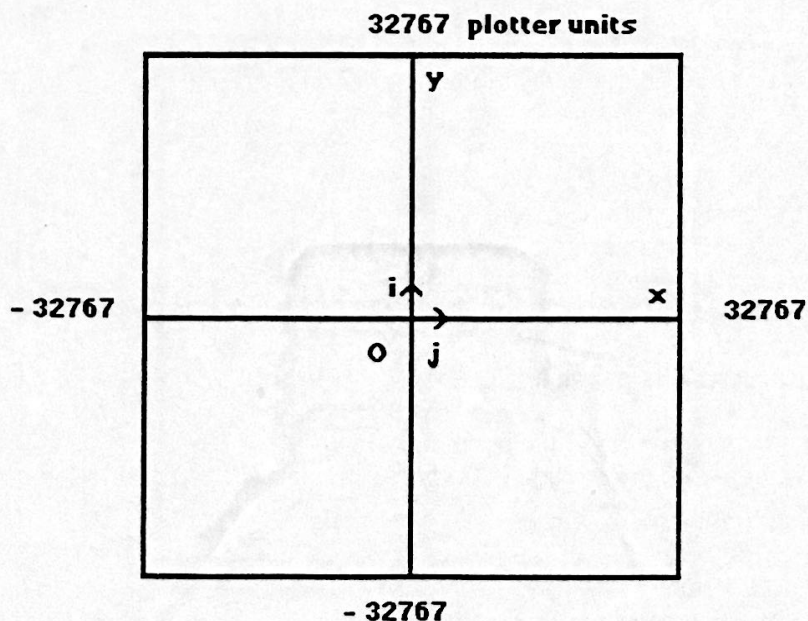
The DG CAD program has been designed to work with any present CAD software. During the transfer, it does its best to place your logo as it was digitized.

Like your CAD one, the DG CAD program calculates the location of the logo in plotter units or in 1/100th mm units (40 plotter units = 1/100th mm).

WARNING ! CHECK THAT THE SIZE OF THE TRANSFERRED LOGO DOES NOT OVERSTEP THE VX2 ENGRAVING AREA THAT IS TO SAY 650X490 MM (OR 19600X26000 PLOTTER UNITS).

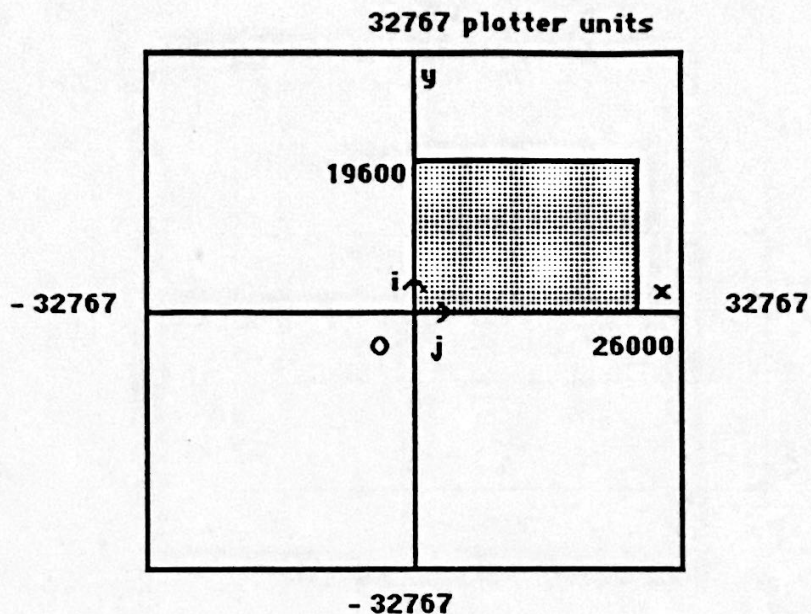
IMPORTANT ! The distance between 2 logo points must not overstep 650 mm or 26200 plotter units.

In order to locate the logo, the program likens the screen to a plotting area : it divides it in 4 parts. The software draws on the screen a cartesian reference (O, i, j) which limits are :



Referring to the X and Y axes, the program considers three cases :

a- The logo was digitized in the right upper window.



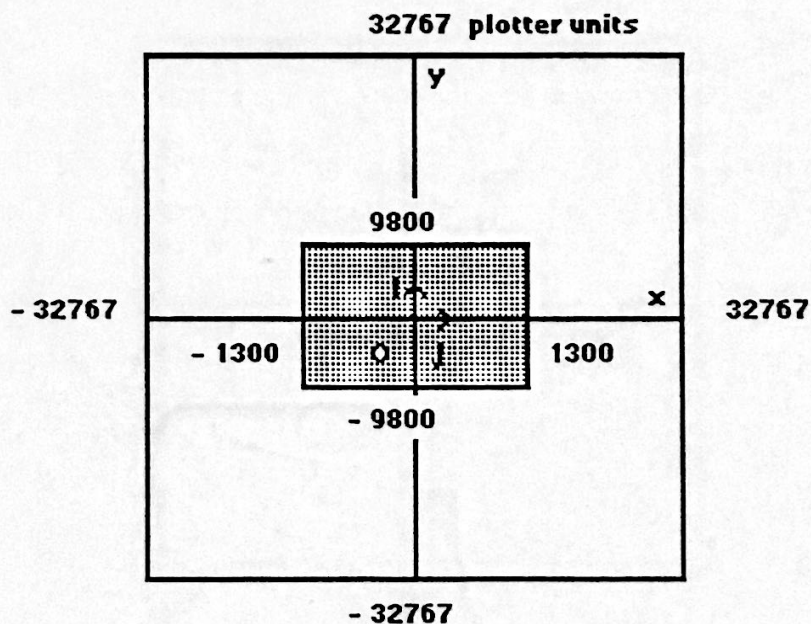
All the logo points are positive. The logo size does not overstep the VX2 format ; it implies that,

$$0 < x < +65000 \text{ and } 0 < y < +49000 \text{ (1/100th mm), or}$$

$$0 < x < +19600 \text{ and } 0 < y < +26000 \text{ (in plotter units).}$$

The previous logo position remains on the screen.

b- The logo was digitized in the central window.



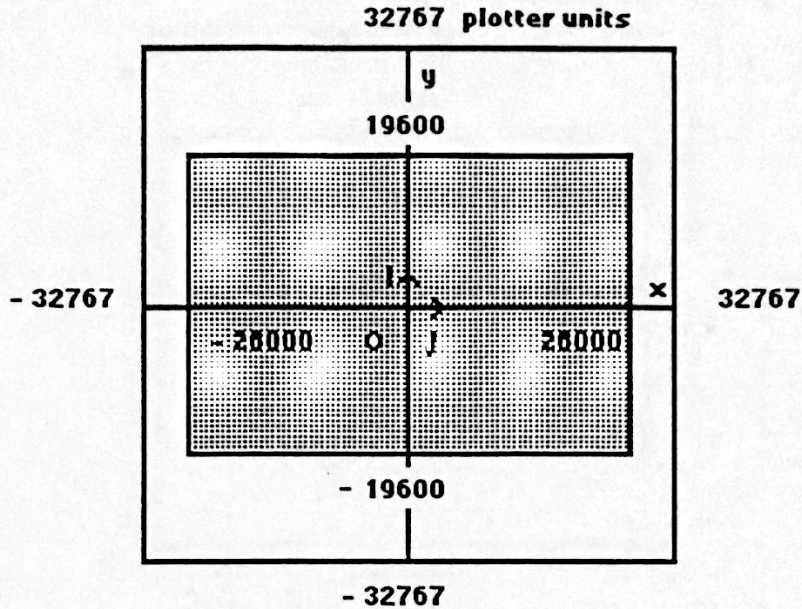
Some logo points have one negative coordinate ($x < 0$ or $y < 0$). The logo size respects the VX2 format ; it implies that,

$$-32500 < x < +32500 \text{ and } -24500 < y < +24500 \text{ (1/100th mm), or}$$

$$-13000 < x < +13000 \text{ and } -9800 < y < +9800 \text{ (in plotter units).}$$

The previous logo position remains on the screen.

c- The logo was digitized in the following area.



Some logo points have at least one negative coordinate ($x < 0$ and/or $y < 0$). The logo size respects the VX2 format ; it implies that,

$$\begin{aligned} & -65000 < x < +65000 \text{ and } -49000 < y < +49000 \text{ (1/100th mm), or} \\ & -19600 < x < +19600 \text{ and } -26000 < y < +26000 \text{ (in plotter units).} \end{aligned}$$

The previous origin of the logo is placed in the lower left corner of the screen.

When the new displaying of the logo does not suit you, the "offset" function stays at your disposal : thanks to this function, you can move the whole logo on the screen.



OFFSET X = 00.00

Hit this key and input the shifting length on the X axis. Validate.

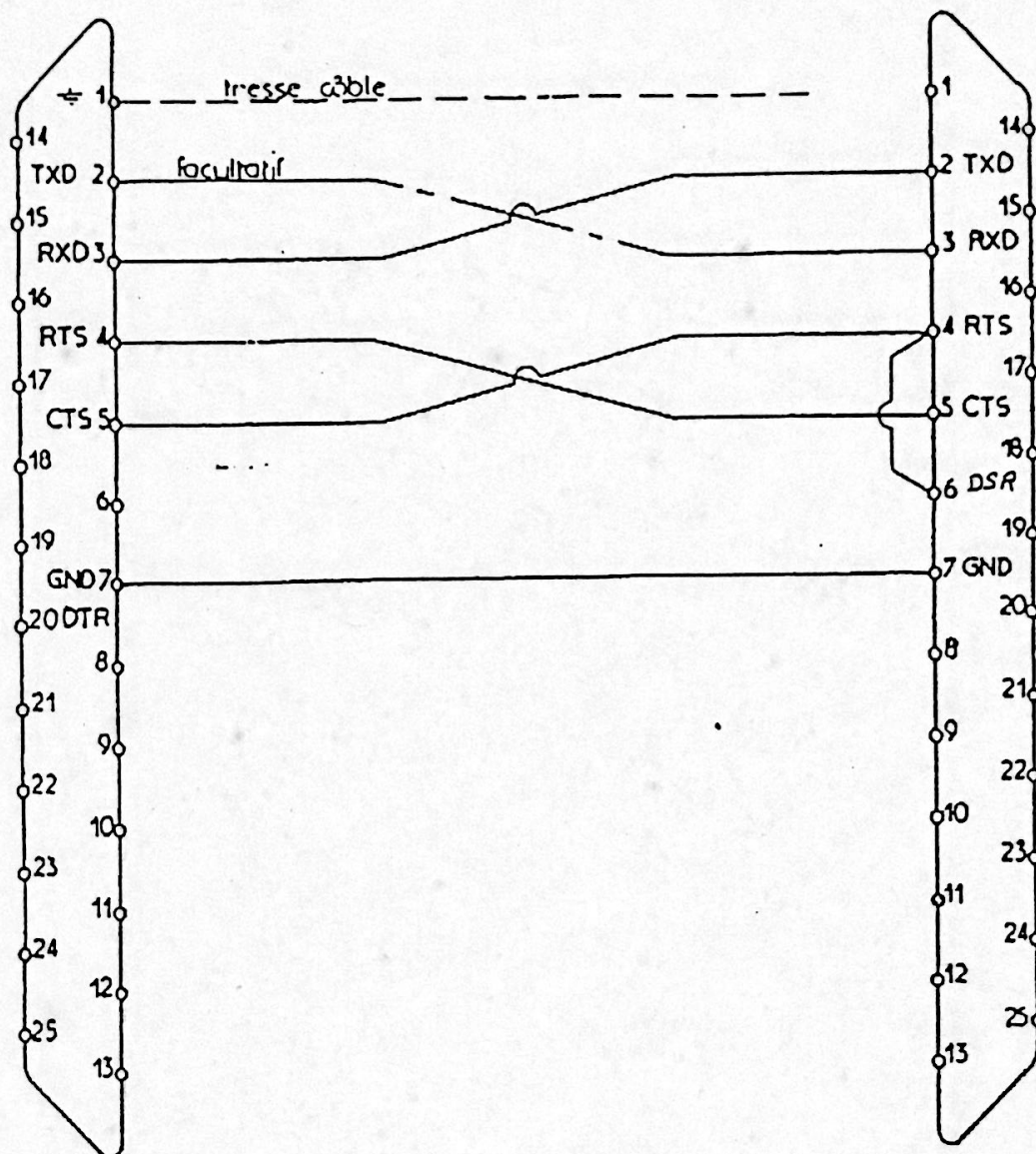


OFFSET Y = 00.00

Hit this key and input the shifting height on the Y-axis. Validate.

On the screen, the logo moves to the fixed location.

Câble 5x0,22 longueur 2m + tresse blindage



Connecteur sub D 25 points mâle
+ boîtier + vis imperdable
(VX)

Connecteur sub D 25 points mâle
+ boîtier + vis imperdable

INDICE		DATE		AUTEUR		MODIFICATIONS			
Tol. sur cotes :		Ra $\sqrt{\quad}$ (Ro $\sqrt{\quad}$)							
Tol. Filetage : 8 H / 6 g									
TOLÉRANCES GÉNÉRALES									
MATIÈRE		SECTION		N° PIÈCE BRUTE		TRAITEMENT THERM.		TRAITEMENT SURFACE	
DÉSIGNATION						ÉCHELLE : . . .		Indice	
CABLE VX - PC						DATE : 24-11-88.		NH	
						DESS : JEANIE		10/0/0	